ENGINEERING
- Display of Biologics
- Engineering Antibodies
- Machine Learning Part 2

TARGETS
- Antibody-Based Therapies
- Autoimmune Diseases NEW
- Challenging Targets

BISPECIFICS
- Safety & Efficacy
- Advancing Multispecifics
- Engineering Bispecifics

IMMUNOTHERAPY
- T Cell Engagers NEW
- Immunoengineering
- Next-Gen Immunotherapies

ANALYTICAL
- Optimisation & Developability
- Analytical Characterisation
- Protein Stability & Formulation

EXPRESSION
- Leveraging Data Science
- Optimising Expression
- Developing Workflows

MACHINE LEARNING
- AI Driven Design
- Machine Learning Part 1
- Machine Learning Part 2

THERAPEUTICS
- Antibody-Based Therapies
- Engineering Conjugates
- Peptide Drug Discovery NEW

PREMIER SPONSORS

Beckman Coulter Life Sciences · BIOINTRON · Cradle · danaher · Genedata · GenScript · IDT · integral · ThermoFisher Scientific · TWIST



18th Annual

PEGS EUROPE

Protein & Antibody Engineering Summit

16-19 NOVEMBER 2026

Lisbon Congress Center | Lisbon, Portugal

"The Best Biologics Technology Meeting in Europe"

FINAL DAYS
TO REGISTER

2026 PLENARY KEYNOTE SESSION

Emerging Modalities and the Future of Antibody Engineering



MODERATOR

Jennifer Cochran, PhD
Stanford University



PANELIST

Ulrike Philippar, PhD
Johnson & Johnson Innovative Medicine



KEYNOTE

The Making of Multispecific Antibodies—A Clinical Perspective
Roland Kontermann, PhD
University of Stuttgart



KEYNOTE

The Future of T Cell Engagers
Patrick Baeuerle, PhD
Cullinan Therapeutics, Inc.

PEGSummitEurope.com

PEGS EUROPE
Protein & Antibody Engineering Summit

TABLE OF CONTENTS



CONFERENCE PROGRAMS

ENGINEERING
- Display of Biologics
- Engineering Antibodies
- Machine Learning Part 2

TARGETS
- Antibody-Based Therapies
- Autoimmune Diseases NEW
- Challenging Targets

BISPECIFICS
- Safety & Efficacy
- Advancing Multispecifics
- Engineering Bispecifics

IMMUNOTHERAPY
- T Cell Engagers NEW
- Immunoengineering
- Next-Gen Immunotherapies

ANALYTICAL
- Optimisation & Developability
- Analytical Characterisation
- Protein Stability & Formulation

EXPRESSION
- Leveraging Data Science
- Optimising Expression
- Developing Workflows

MACHINE LEARNING
- AI Driven Design
- Machine Learning Part 1
- Machine Learning Part 2

THERAPEUTICS
- Antibody-Based Therapies
- Engineering Conjugates
- Peptide Drug Discovery NEW

CONFERENCE AT-A-GLANCE

PLENARY KEYNOTE SESSION

SPONSORS

SHORT COURSES

TRAINING SEMINARS

SPONSOR & EXHIBIT OPPORTUNITIES

HOTEL & TRAVEL INFORMATION

REGISTRATION INFORMATION

Click to View

"I was very much impressed by the quality of the event, the depth and breadth of the presentations, as well as the scientific discussions and excitement. This is the event to participate and enjoy."

- Yan Q., PhD, Senior Principal Scientist, Rinat Pfizer

CONFERENCE AT-A-GLANCE

	MONDAY 16 November	TUESDAY 17 November	WEDNESDAY 18 November	THURSDAY 19 November
ENGINEERING	Pre-conference Short Courses & Training Seminars*	Display of Biologics	Engineering Antibodies	Machine Learning Part 2
TARGETS		Antibody-Based Therapies	Autoimmune Diseases NEW	Challenging Targets
BISPECIFICS		Safety and Efficacy of Bispecifics	Advancing Multispecifics	Engineering Bispecifics
IMMUNOTHERAPY		T Cell Engagers NEW	Immunoengineering	Next-Gen Immunotherapies
ANALYTICAL		Optimisation & Developability	Analytical Characterisation	Protein Stability & Formulation
EXPRESSION		Leveraging Data Science	Optimising Expression	Discovery Workflows
MACHINE LEARNING		TS7B: AI-Driven Design of Biologics	Machine Learning Part 1	Machine Learning Part 2
THERAPEUTICS		Antibody-Based Therapies	Engineering Conjugates	Peptide Drug Discovery NEW

Training SEMINARS
By Cambridge Healthtech Institute

TS1A: Introduction to Multispecific Antibodies: History, Engineering, and Applications

TS2A: Everything You Ever Wanted to Know about Immunogenicity

TS3A: Introduction to Machine Learning for Biologics Design

TS4A: Protein Production 201: Applying End-to-End CEPA Workflow

TS7B: AI-Driven Design of Biologics: A Hands-on Guide to Using State-of-the-Art ML Protein Models

Separate registration required for short courses.

> **"The best biologics technology meeting in Europe. A must-attend conference for novel biologics."**

Rakesh D., PhD | President & CEO, Bionavigen



PLENARY KEYNOTE SESSION

18 NOVEMBER 2026 | 15:45-16:50

Emerging Modalities and the Future of Antibody Engineering



MODERATOR

Jennifer Cochran, PhD
Stanford University



PANELIST

Ulrike Philippar, PhD
Johnson & Johnson Innovative Medicine



KEYNOTE

The Making of Multispecific Antibodies—A Clinical Perspective
Roland Kontermann, PhD
University of Stuttgart



KEYNOTE

The Future of T Cell Engagers
Patrick Baeuerle, PhD
Cullinan Therapeutics, Inc.

PEGS EUROPE
Protein & Antibody Engineering Summit





Present a Poster & SAVE €50

Cambridge Healthtech Institute encourages attendees to gain further exposure by presenting their work in the poster sessions. To secure an onsite poster board and/or ensure your poster is included in the conference materials, your full submission must be received, and your registration paid in full by **9 October 2026.**

Register and indicate that you would like to present a poster. Once your registration has been fully processed, we will send an email with a unique link and instructions for submitting your materials.

LEARN MORE

REASONS YOU SHOULD PRESENT YOUR RESEARCH POSTER AT THIS CONFERENCE:

- **Your research will be seen by our international delegation, representing leaders from top pharmaceutical, biotech, academic, and government institutions**
- **Discuss your research and collaborate with other attendees**
- **Your poster will be published in our conference materials**
- **Receive €50 off your registration**

CURRENT SPONSORS



PEGS EUROPE
Protein & Antibody Engineering Summit

PREMIER SPONSORS

Beckman Coulter Life Sciences
BIOINTRON
Cradle
danaher
Genedata
GenScript Scripting Possibilities
IDT Integrated DNA Technologies
integral molecular
ThermoFisher Scientific
TWIST Bioscience

CORPORATE SPONSORS

ABLEXIS AlivaMab Biologics
ABSELION
ABZENA Moving medicine forward.
Acro Biosystems
Agilent Trusted Answers
Alloy Therapeutics
APOHA
ATUM
Benchling
BIO-RAD
Biotage
BRUKER
Catalent Pharma Services
Chemical Computing Group
Cube Biotech
DIMA BIOTECH Recombinant mAbs and proteins
ENPICOM
EVAXION
evitria trustworthy · precise · swiss
ExcellGene EXPECT GREAT SCIENCE
FairJourneyBio THE ANTIBODY COMPANY
FyoniBio
GeneFrontier
GENEWIZ From Azenta Life Sciences
genoway ULTIMATE PREDICTABILITY
i3 Your Companion Life Science Separation
IGA SAGEN
invenra
isogenica The VHH Company™
KACTUS
KBI BIOPHARMA
lightcast
Lonza
Malvern Panalytical
MindWalk
mosaic
NONA BIOSCIENCES
nuclera
PAIA
PHOTOTHERMAL SPECTROSCOPY CORP
ProBioGen Intelligent Biopharmaceutical Solutions
PROIMMUNE www.proimmune.com
Prolific Machines
PYTHIA
Rezonbio
SARTORIUS
Scala Biodesign

CORPORATE SUPPORT SPONSORS

A-ALPHA BIO
ASIMOV
ATEM STRUCTURAL DISCOVERY
avsbio
BIOCYTOGEN
biofidus
bioNEER
Canton Biologics
carterra
CLADE
clean cells SOLUTION FOR BIOLOGICS
CiniSciences
Converge
Creative Biolabs
Deeptope
Demeetra
DPBIO
Fluidic Sciences
Fidabio
FUJIFILM Value from Innovation
Galatek
gator
Gene Universal
GENOVAC
GENOVIS
GentleGen
ingenza
iBET
INFORS HT
Kuhner shaker
Kimialys
KoreaBio
Leanbio BRIDGING SCIENCE AND MANUFACTURING
LiveDrop
LX bio
MaxCyte
Mi LABORATORIES
MULTUS
nicoya
NUMAFERM
OPENPROTEIN.AI
primrose bio
Portal
ProteGenix
Quality Assistance
rapid novor
RIC biologics
Rodon Biologics Express your needs
RoukenBio
RxBiologics
Samplix
SIEMENS
SMARTFREEZ PRECISION CRYOSYSTEMS
SYGNATURE DISCOVERY
Tamarind Bio
TSINGKE
WuXi Biologics Global Solution Provider

SHORT COURSES



IN-PERSON ONLY

*Separate registration required.

All short courses will take place in-person only from 14:00 – 17:00 on 16 November. Our short courses are designed to be instructional, interactive, and provide in-depth information on a specific topic. They allow for one-on-one interaction between the participants and instructors to facilitate the explanation of the more technical aspects that would otherwise not be covered during our main presentations.

SC1: Reinventing Conjugate Therapeutics: Payload Revolution, Target Expansion and Clinical Translation

Instructor:

Lenka Sadilkova, PhD, Director, R&D Program, Eli Lilly ČR, s.r.o.

SC2: Developability of Bispecific Antibodies

Instructor:

Nimish Gera, PhD, Co-Founder and CSO, Stealth NewCo

Bispecific antibodies are a rapidly growing and clinically validated class of antibodies with marketed drugs and multiple candidates in clinical trials. Targeting multiple antigens in a synergistic manner can confer enhanced therapeutic benefit and potentially uncover novel biological mechanisms. However, multiple formats and a tedious candidate selection process to select functional and developable bispecific antibodies makes such programs cumbersome. This short course highlights the rapid growth in the field, therapeutic applications, and focuses on challenges with discovery and development of bispecific antibodies. We will use an approved bispecific antibody as a case study to understand the varied aspects of discovery and development of bispecific antibody programs.

SC3: *In silico* and Machine Learning Tools for Antibody Design and Developability Predictions

Instructors:

Federico Devalle, PhD, Senior Data Scientist, AstraZeneca

Ben Williams, PhD, Research Software Engineer, Department of Statistics, University of Oxford

Given the exciting pace in the evolution of machine learning tools towards antibody design and developability predictions, we plan to present an overview in this field specifically geared towards antibody design and developability predictions. There will be a live demo as well as a few ML tools.



“It was a good conference and I really enjoyed having a session dedicated to structure-function analysis - this is not commonly found in other conferences.”

Bernice Y., PhD, Global Head of Characterization, Analytical Development, Shire

Training SEMINARS

By Cambridge Healthtech Institute

16 & 17 NOVEMBER

IN-PERSON ONLY

This 1-day training seminar provides a practical, comprehensive overview of immunogenicity—the causes, how to assess an immunogenicity risk, and what to do if you observe immunogenicity during preclinical, clinical, and post-market approval. The seminar begins by detailing the science behind immunogenicity and the latest international guidance, followed by assay and bioanalytical assessment strategies for traditional and emerging biologics. Other topics include non-clinical models, the role of AI/ML, and reporting immunogenicity.

Training Seminars Will Be Held In-Person Only

To ensure a cohesive and focused learning environment, moving between conference sessions and the training seminars is not allowed.

MONDAY, 16 NOVEMBER, 2026 08:30 - 17:00

TS1A: Introduction to Multispecific Antibodies: History, Engineering, and Applications

Instructor:

G. Jonah Rainey, PhD, Associate Vice President, Eli Lilly and Company

Introduction to Multispecific Antibodies is an informative and practical guide to getting up to speed on critical aspects of multispecific antibody therapeutics. Topics will include historical successes, failures, and lessons learned. Specific practical instruction will span mechanisms of action, engineering, developability, regulatory considerations, and translational guidelines. Perspectives on ideal implementation of multispecifics as targeted and immunomodulatory approaches will be discussed.

TS2A: Everything You Ever Wanted to Know about Immunogenicity

Instructors:

Chloé Ackaert, PhD, Senior Scientist, Immunogenicity, IQVIA Laboratories

Timothy Hickling, PhD, Consultant, Quasor Ltd; CSO, Open Immune

Aurelie Mazy, Scientist, IQVIA Laboratories

This 1-day training seminar provides a practical, comprehensive overview of immunogenicity—the causes, how to assess an immunogenicity risk, and what to do if you observe immunogenicity during preclinical, clinical, and post-market approval. The seminar begins by detailing the science behind immunogenicity and the latest international guidance, followed by assay and bioanalytical assessment strategies for traditional and emerging biologics. Other topics include non-clinical models, the role of AI/ML, and reporting immunogenicity.

TS3A: Introduction to Machine Learning for Biologics Design

Instructor:

Christopher R. Corbeil, PhD, Research Officer, Human Health Therapeutics, National Research Council Canada

This course offers an introduction to concepts, strategies, and machine learning methods used for biologics design. It includes presentations and demonstrations of the methods used in the field, covering techniques such as triaging sequences, modulating affinity, and designing antibody libraries, along with increasing manufacturability. The course is directed at scientists new to the field and protein engineers wanting an introduction to how machine learning can aid in guiding biologics design.

TS4A: Protein Production 201: Applying End-to-End CEPA Workflow

Instructors:

Richard Altman, MS, Field Application Scientist, Thomson Instrument Company

Christopher Cooper, DPhil, Senior Lecturer in Biotechnology, University of Surrey

Dominic Esposito, PhD, Senior Director, Protein Sciences, Septerna

Protein production is more complex than just the act of expressing the proteins. This training seminar will review the end-to-end protein production CEPA (Cloning, Expression, Purification, Analytics) workflow process and focus on how to increase its efficiency and productivity. The choice of a suitable host expression system depends mainly on the biological and biochemical properties of an individual protein. We will review the concepts and applications of the major host expression systems, then turn our focus to the optimization of the entire CEPA workflow, including an emphasis on upfront approaches to maximize the likelihood of success while minimizing costs, challenges in expression and purification, and how to establish high quality protein QC standards. This seminar will combine instruction and case studies in an interactive environment. It is recommended for scientists of all experience levels interested in addressing the demand for increasingly complex proteins within ever decreasing timelines.

TUESDAY, 17 NOVEMBER, 2026 08:30 - 18:35

TS7B: AI-Driven Design of Biologics: A Hands-on Guide to Using State-of-the-Art ML Protein Models

Instructor:

David P. Nannemann, PhD, Vice President, Rosetta Commons Foundation

Since 2021, artificial intelligence models have revolutionized AI-driven biologics development, enabling breakthroughs in structure prediction, sequence design, and protein engineering. This course equips researchers and professionals with the expertise to leverage cutting-edge tools for structure prediction (AlphaFold, ImmuneBuilder), protein engineering with protein language models (ESM, AntiBERTy) and structure-based design (ProteinMPNN and RFDiffusion). Through a blend of lectures and hands-on exercises, participants will learn best practices for tool selection, method optimisation, and design selection. By exploring real-world applications and emerging techniques, such as BindCraft and RFAntibody, attendees will gain a practical understanding of performance capabilities, limitations, and effective workflows.

13TH ANNUAL | LISBON, PORTUGAL

DISPLAY OF BIOLOGICS

Leading the Way for New Classes of Therapy



TUESDAY 17 NOVEMBER

7:30 Registration and Morning Coffee

COMBINATORIAL METHODS TO IMPROVE BIOLOGIC DISCOVERY: Combining Deep Sequencing and Computational Methods

8:25 Chairperson's Remarks

Goril Berntzen, PhD, Group Leader, Discovery, Nextera AS

8:30 Quantitative Screening and Characterisation of Macrocyclic Peptide Ligands Using Yeast Surface Display

Alessandro Angelini, PhD, Professor, Department of Molecular Sciences and Nanosystems, European Center for Living, Technology Ca' Foscari University of Venice

Macrocyclic peptides are valuable molecular formats for drug development, bridging small molecules and larger biologics. We recently developed a yeast-based combinatorial platform for the quantitative screening and characterisation of these ligands. By integrating flow cytometry and next-generation sequencing, the platform screens millions of variants hourly, enabling real-time monitoring and tuning of binding properties. We will present our progress in evolving macrocyclic peptide ligands against diverse protein targets.



9:00 KEYNOTE PRESENTATION: Evolution of Design and Design of Evolution

Andreas G. Plueckthun, PhD, Professor and Head, Biochemistry, University of Zurich

Two application areas for engineered binding molecules will be highlighted. For *in vivo* production of therapeutics, our SHREAD platform of VLPs targets particular cells and organs with adapter strategies. We have expressed BiTEs *in situ*, reprogrammed T cells *in vivo*, and targeted lymph-node DCs. Second, for linear epitopes, we create binding proteins from pre-designed modules, combining AI-based and physics-based design with directed evolution in the same molecule.

9:30 PANCS-Binders: A Rapid Binder Discovery Platform

Bryan Dickinson, PhD, Assistant Professor, Department of Chemistry, University of Chicago

Discovering binders and modulating interactions are two of the central challenges in chemical biology and drug discovery. Here I describe two complementary platforms developed in our lab. PANCS-Binders enables rapid, scalable discovery of miniprotein and peptide-based binders to targets of interest. PANCS-glues leverages intrinsically disordered peptides to drive cooperative, context-independent protein-protein interactions. Together, these technologies provide powerful new strategies for discovering molecules that modulate biological systems.

10:00 Accelerating Multispecific Antibody Discovery and Development with the B-Body Platform

Colby Souders, CSO, Biopharma, Twist Bioscience

Discover the B-Body platform, the high-performance solution for accelerating multispecific antibody development. Achieve CMC-ready bispecifics in just four weeks with B-Body Express platform. Our proprietary design eliminates light chain mispairing, delivers exceptional yields up to 11 g/L, and ensures low manufacturing risk using standard mAb purification. Screen in the final therapeutic format, including Fc mutations and ADC compatibility, and mitigate risk across all development stages.

10:30 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing

11:15 Discovering Antibodies against Tumour Glyco-Epitopes: Structure-Guided Phage Display Targeting Tn/STn in Protein Context

Ola Blixt, PhD, CEO, Combotrope Therapeutics

Tumour-associated glycans Tn and STn are attractive but underexploited oncology targets due to challenges in achieving selective targeting. We present a structure-guided phage display platform generating monoclonal antibodies against glycopeptide epitopes ("combotopes") by combining glycan-binding VH domains with peptide-selective VL diversity. The platform enables both discovery of new high-affinity antibodies and rapid optimisation of tumour-selective specificity for therapeutic development.

HYBRID WORKFLOWS: Augmenting Biologics Discovery with AI/ML

11:44 Chairperson's Remarks

Maria Groves, PhD, Senior Director, AstraZeneca

11:45 Leveraging Deep Screening and Machine Learning for the Engineering of Conditional pH Sensitive Antibodies

Ben Porebski, PhD, Co-Founder and CEO/CTO, Sortera Bio

Deep screening is a novel high-throughput method for the rapid and massively parallel screening of biologics. It enables the experimental collection of up to 6 million scFv sequences paired with functional measurements (KD, protein expression, polyreactivity), identifying hits where traditional methods fail. Here, we will present recent work leveraging AI/ML for the design of conditionally pH sensitive antibodies.

13TH ANNUAL | LISBON, PORTUGAL

DISPLAY OF BIOLOGICS

Leading the Way for New Classes of Therapy



12:15 LUNCHEON PRESENTATION: Benchling Biologics: AI Infrastructure for Modern Antibody Discovery

Paul Monnier, Solution Consultant, R&D, Benchling

Antibody programs sit on years of data that should be an ML advantage. In practice, it rarely is. Data infrastructure hasn't kept pace with novel formats, leaving data siloed and relationships missing. AI-drive discovery demands a standard nomenclature and connected experimental context. We introduce Benchling Biologics - antibody registration with structural awareness and automated annotation across mAbs, bispecifics, and fusions - and show how teams unlock faster DBTL cycles with structured data.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

HYBRID WORKFLOWS: Augmenting Biologics Discovery with AI/ML *(Cont.)*

14:00 Chairperson's Remarks

Maria Groves, PhD, Senior Director, AstraZeneca

14:05 *De novo* Designed pMHC Binders Facilitate T Cell–Mediated Cytotoxicity toward Cancer Cells

Monica L. Fernandez-Quintero, PhD, Associate Professor, Department of Microbiology and Immunology, Novo Nordisk Foundation Initiative for Vaccines and Immunity (NIVI)

In recent studies, we could show structure-and dynamics-guided binder design and downselection strategies integrating machine-learning-driven protein design, molecular dynamics simulations, and physics-based interface analyses. Candidate binders were prioritized through conformational stability, interaction energetics, and developability assessments alongside experimental validation, enabling the identification of high-confidence binders with optimized biophysical properties.

14:35 Bridging *de novo* Protein Design and Display Technologies for Next-Generation Binder Discovery

Timothy Patrick Jenkins, PhD, Associate Professor and Head of Center for Translational Protein Design, DTU Bioengineering

Using our recent pMHC binder work as the central case study, I will describe how we combine *de novo* computational design with mammalian display to identify and mature binders against highly challenging targets. The workflow integrates structurally generative design at the front end, mammalian display for functional discovery and enrichment, *in silico* specificity maturation to reduce off-target liabilities, and *in vitro* polyspecificity fingerprinting to characterise developability and selectivity.

15:05 Integrating AI/ML and Next-Generation Sequencing for Accelerated Discovery of Single Domain Antibodies

Andreas Evers, PhD, Associate Scientific Director, Antibody Discovery & Protein Engineering, Global Research & Development Discovery Technology, Merck Healthcare KGaA

This presentation highlights how next-generation sequencing (NGS) of VHH immune repertoires after immunization and display-based screening can be combined with data-driven prioritization and AI-enabled sequence design to support single domain antibody (sdAb) hit discovery. Our workflow includes a One Shot humanization and multi-parameter optimization approach using language models to generate humanized, developability-aware candidates early in the process. Scope, practical limitations, and hit rates will be discussed.

15:35 Diversity by Design: AlivaMab Mouse-NGX and AlivaMab Mouse-SDX Immune Repertoires Accelerate Biologics Discovery

Jane Seagal, Senior Vice President of Research, Research, AlivaMab Biologics LLC

AlivaMab Mouse-NGX and AlivaMab Mouse-SDX carry innovative modifications that expand natural immune repertoires of fully human VH/VL and VH-only single-domain antibodies. Computational tools show how these modifications expand clonotype, paratope, and epitope diversity of antibody panels recovered through NGS, hybridoma, immune display, and single B-cell workflows. These insights guide prioritization of leads suitable for therapeutic development, including binding arms for advanced modalities.

16:05 Refreshment Break in the Exhibit Hall with Poster Viewing

16:49 Chairperson's Remarks

Mark J. Austin, PhD, Associate Director, in vitro Display & AI Innovation, AstraZeneca

16:50 SpyDisplay Enabled Antibody Discovery: From Therapeutic Leads to Research and Diagnostic Reagents

Christian Frisch, R&D Manager, Custom Antibodies, Bio-Rad Laboratories

Bio-Rad's SpyDisplay platform pairs a large, diverse synthetic human Fab library with a built-in SpyTag for rapid, covalent, single-step capture and reformatting of selected binders. The full Pioneer library — one of the largest functional antibody phage display libraries ever built, curated for favorable germlines and reduced liability motifs — delivers broad epitope coverage and high-affinity therapeutic leads, including against challenging targets such as GPCRs, with affinity and functional activity matching or exceeding clinical benchmark antibodies. The streamlined Pioneer Select Library (PSL) applies the same SpyDisplay technology for faster turnaround in applications such as anti-idiotype (anti-



13TH ANNUAL | LISBON, PORTUGAL

DISPLAY OF BIOLOGICS

Leading the Way for New Classes of Therapy

ID) reagents and research or diagnostic antibodies. We discuss how this shared platform supports antibody discovery from early drug development through downstream reagent supply.

17:20 The Development of iSeRa-AI, a Tool for Automatic Selection of mAbs from Antibody Display Coupled to Deep Sequencing

André F. Faustino, PhD, Senior Scientist, Animal Cell Technology Unit, Instituto de Biologia Experimental e Tecnológica (iBET)

iSeRa-AI tool is being built to better select candidates, extract more information from the datasets and automate the process. iSeRa-AI selects candidates by analysing the entire dataset and taking into account similarity between sequences, counter-selection, traits of non-specificity and of bad developability.

17:50 PANEL DISCUSSION: BEST PRACTICES FOR *IN SILICO* DESIGN OF ANTIBODIES: What We Know Now

Moderator: Rebecca Croasdale-Wood, PhD, Senior Director, Augmented Biologics Discovery & Design, Biologics Engineering, Oncology, AstraZeneca

- Delivery of optimised antibodies
- Delivery of *de novo* antibodies
- Future perspectives

Panelists:

Andrew R.M. Bradbury, MD, PhD, CSO, Specifica, an IQVIA business

Andreas Evers, PhD, Associate Scientific Director, Antibody Discovery & Protein Engineering, Global Research & Development Discovery Technology, Merck Healthcare KGaA

Monica L. Fernandez-Quintero, PhD, Associate Professor, Department of Microbiology and Immunology, Novo Nordisk Foundation Initiative for Vaccines and Immunity (NIVI)

Roberto Spreafico, PhD, Senior Director, Biologics AI Innovation, AstraZeneca

18:19 From Droplet to Decision in Antibody Discovery: Functional Single-Cell Biology with Envisia

lightcast

Sarah Taylor, PhD, Vice President of Science, Lightcast

Most antibody discovery screens measure binding to purified antigen, a proxy for function. Rare, valuable clones demand measuring each secreting cell directly.
Envisia, a benchtop platform from Lightcast, isolates single cells in light-controlled droplets with live imaging of secretion and binding, delivering up to 86% correctly paired cells or targets after two merges. With an early access biopharma partner, plasma cells were selected on live imaging within two hours of merging. The campaign yielded 43 unique paired heavy and light chain sequences, mostly absent from the partner's FACS campaign, suggesting functional selection reaches diversity that surface-based sorting misses.

18:50 Welcome Reception in the Exhibit Hall with Poster Viewing

19:50 Close of Display of Biologics Conference

11TH ANNUAL | LISBON, PORTUGAL

ENGINEERING ANTIBODIES & BEYOND

Smarter Antibodies for Oncology's Hardest Problems

WEDNESDAY 18 NOVEMBER

7:30 Registration and Morning Coffee

ENGINEERING SMARTER ANTIBODIES

8:25 Chairperson's Remarks

Benjamin J. Hackel, PhD, Professor, Chemical Engineering & Materials Science, University of Minnesota



8:30 KEYNOTE PRESENTATION: Empowering Next-Generation Antibodies: Synergy of Conditional Activation and Fc Engineering

Hitoshi Katada, PhD, Head of Biologics Engineering, Chugai Pharmaceutical Co. Ltd.

Conventional antibody therapeutics often face critical safety–efficacy trade-offs. We present an integrated approach combining an ATP-dependent conditional activation technology for tumour-selective targeting with Fc engineering technologies. By integrating tumour-microenvironment-specific target engagement with precisely tuned effector and agonistic functions, this synergistic approach overcomes systemic toxicity while maximising anti-tumour efficacy, offering a breakthrough paradigm for developing highly specific and potent immunotherapies.

9:00 Next-Generation Conditionally Active Biologics: Field Landscape and *de novo*–Designed Masks

Benjami Oller-Salvia, Associate Professor, IQS

Conditionally-active biologics have emerged as a powerful approach to improve the therapeutic index of protein drugs by restricting activity to diseased tissues. In this presentation, we will first review current design trends, successes, and remaining limitations. We then present a *de novo* computational workflow for minimal cleavable peptide masks that reversibly inactivate miniprotein binders, enabling library-free generation of next-generation conditionally-active biologics.

9:30 Antibody Properties That Control Immune Receptor Signalling: Lessons from Affinity, Rigidity, and Geometry

Mark S. Cragg, PhD, Professor, Experimental Cancer Biology, Antibody and Vaccine Group, School of Cancer Sciences, University of Southampton

Immunomodulatory antibodies represent an exciting new modality for immunotherapy. Whereas checkpoint blockers have translated successfully into the clinic, agonistic antibodies directed to immune receptors have lagged behind and represent an untapped opportunity for immunotherapy. Here, we highlight the salient properties of antibodies required to agonise both activating and inhibitory receptors and discuss the role of affinity, hinge rigidity and geometry.

10:00 Designing for the Final Architecture: Engineering Antibodies and Other Proteins to Accelerate Complex Biologics

Maria Pajuelo, Co-founder, EVP Technology and Scientific Office, FairJourney Bio

Next-generation biologics such as multispecifics and engineered cytokines perform as a whole design, so optimizing parts in isolation drives costly iterations. We present two final-architecture approaches. A published conditionally activated cytokine: a dual-specificity Fab masks it in circulation and a targeting arm drives avidity-based unmasking in the tumor, within a QSP-defined affinity window. And our proprietary Mammalian Display, engineering molecules in final format to shorten timelines.

10:30 Coffee Break in the Exhibit Hall with Poster Viewing

INTRACELLULAR TARGETING AND DELIVERY

11:15 FcγRs As Entry Points for FcRn Delivery

Gestur Vidarsson, PhD, Group leader, Immunoglobulin Research Lab, Sanquin Research

Fc? receptors (Fc?Rs) mediate effector functions upon cross-linking by IgG immune complexes, whereas the neonatal Fc receptor (FcRn) acts in intracellular vesicles to extend IgG half-life and support transcellular transport. We show that Fc?Rs are essential for internalisation and delivery of monomeric IgG and IgG immune complexes to FcRn in monocytic cells, with little uptake by pinocytosis, and demonstrate how Fc-engineering can exploit this cooperation *in vitro* and *in vivo*.

11:45 Targeting Intracellular Protein Interactions Using Antibody Fragment mRNA Expression Cargoes within Nanoparticle Delivery Vehicles

Terence Rabbitts, FRS, FMedSci, Professor, Molecular Immunology, Center for Cancer Drug Discovery, Institute of Cancer Research

Cancer can involve aberrant transcription factor complexes considered undruggable. Intracellular antibody variable region fragments are effective inhibitors of protein interactions. Further, they can be augmented with effector functions, such as E3 ligases or procaspases. However, delivering these proteins into cells as potential drugs is problematic. We will describe nanoparticles to deliver mRNA cargoes expressing intracellular proteins, coupled to enhanced effectiveness with nanoparticle-coated gateway molecules interacting with receptors on target cells.

11TH ANNUAL | LISBON, PORTUGAL

ENGINEERING ANTIBODIES & BEYOND

Smarter Antibodies for Oncology's Hardest Problems

12:15 LUNCHEON PRESENTATION: Evolution of Specifica's Gen3 Technology: Functional Bispecifics Directly from Constant Light Chain Libraries

Andrew Bradbury, Chief Scientific Officer, Specifica, an IQVIA business

Luis Rodriguez, Specifica, an IQVIA business

Specifica's Generation 3 platform embeds germline-matched, liability-purged human CDRs into developable antibody frameworks and supports scFv, Fab, scFab and VHH libraries. Without further optimization, >80% of selected antibodies and VHHs are developable; >50% of campaigns yield subnanomolar antibodies, with a 9.2 pM record. Its constant light chain library generated HER2/HER3 bispecifics with high affinity, strong developability and potent *in vitro* activity, reducing multispecific engineering.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

ENGINEERING FOR SOLID TUMOURS

14:00 Chairperson's Remarks

Mark S. Cragg, PhD, Professor, Experimental Cancer Biology, Antibody and Vaccine Group, School of Cancer Sciences, University of Southampton

Benjami Oller-Salvia, Associate Professor, IQS

14:05 Targeted Enzymatic Access into Solid Tumors

Mark L. Chiu, PhD, President, Qilin Glen LLC

Hyaluronan-rich stroma in solid tumors prevent effective tumor growth inhibition. Targeted hyaluronan degradation with TAVO423 (FAP × LRRC15 × hyaluronidase) achieved greater intratumoral HA depletion resulting in superior tumor growth inhibition with other solid tumor targeting modalities such as 5-fluorouracil, anti-PD-L1 , a PD-L1 × CD3 TCE, and a CD318-ADC. We demonstrated the broad potential of the modular antibody-enzyme platform to overcome barrier entry in HA-rich solid tumors.

14:35 Hijacking Ras Signaling: Synthetic Effectors for Selective Targeting of Pancreatic Cancer

Julia M. Shifman, PhD, Professor, Biological Chemistry, The Alexander Siblerman Institute for Life Sciences, The Hebrew University Jerusalem

Targeting oncogenic Ras mutants remains highly challenging. We explored a powerful and innovative strategy to target Ras-driven pancreatic cancer by leveraging the natural Ras effector and tumour suppressor Nore1A. We engineered Nore1A into a RasG12D-specific "superbinder" and endowed it with cell-penetrating capabilities. When tested in pancreatic cancer cells harboring the RasG12D mutation, the engineered protein exhibited a dual therapeutic effect, simultaneously suppressing pro-tumourigenic processes while activating anti-cancer pathways.

15:05 Prototype Power Play: Perfecting CHO Platforms for Next-Gen Therapeutics

Stefan Schmidt, CSO, evitria AG

Multispecific antibodies resemble an extreme diversity of formats and designs that facilitate a wide range of functionalities and modes of action. We will showcase our toolbox of technologies, leveraging the full potential of algorithm supported smart transfection optimisation and streamlined chromatography through a series of case studies on next-generation biotherapeutics. All examples demonstrate our powerful prototype production platform based on transient expression in CHO.

15:35 Transition to Keynote session

PLENARY KEYNOTE SESSION



15:45 Chairperson's Remarks

Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC



15:50 The Making of Multispecific Antibodies—A Clinical Perspective

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

- How has the field of multispecific antibodies evolved in recent years?
- What are the modes of action utilised by multispecific antibodies?
- What are the frequently used targets and target combinations?
- What are the emerging applications?

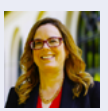


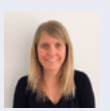
16:00 The Future of T Cell Engagers

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

- TCE approvals are catching up with ADC approvals
- Compelling single-agent activity in blood-borne and solid tumor indications
- Diverse formats and targets work for TCEs
- Several ways to augment the efficacy and safety of TCEs: hundred percent response rates at reach
- Treatment of minimal residual disease and target combinations
- Recent highlights pointing at the future of TCEs

16:10 FIRESIDE CHAT: Emerging Modalities and the Future of Antibody Engineering





11TH ANNUAL | LISBON, PORTUGAL

ENGINEERING ANTIBODIES & BEYOND

Smarter Antibodies for Oncology's Hardest Problems

Moderator: Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

- Bispecific antibodies and T cell engagers
- Design principles
- Complex formats: Trispecifics and costimulation
- Bispecifics compared to ADCs or CAR-T
- Next frontiers beyond cancer

Panelists:

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

Ulrike Philippar, PhD, Vice President Oncology, Global Head of Discovery, Johnson & Johnson Innovative Medicine

16:50 Refreshment Break in the Exhibit Hall with Poster Viewing

YOUNG SCIENTIST MEET-UP

IN-PERSON ONLY: Young Scientist Meet Up

Raphaelle Drean, PhD, Project Manager, Scientist, R&D, Affilogic

Iris Goldman, Conference Producer, Cambridge Innovation Institute

Leire Oyon, Research Scientist, Protein Crystallography Unit, Navarrabiomed

Isabel Waibel, Graduate Student, Biochemical Engineering, ETH Zurich

The young scientist meet-up is an opportunity for scientists entering the field to develop connections across institutions, and for established leaders to come build relationships with the next generation of scientists. The meet-up will pave the way for mentorships, professional opportunities, and scientific discovery.

- Get to know fellow peers and colleagues
- Make connections and network with other institutions
- Inspire others and be inspired!

ENGINEERING FOR SOLID TUMOURS *(CONT.)*

17:30 Accelerating AI-Driven Antibody Discovery and Developability through High-Throughput platform.

Jing Gong, Senior Tech Specialist, Neurodegenerative Diseases Research, Sino Biological US Inc.

AI is transforming therapeutic antibody discovery through protein structure prediction, sequence optimization, and the generation of novel antibody candidates. However, translating AI-designed molecules into functional, stable, and developable therapeutics remains a major challenge. Experimental validation is essential to assess target binding, biological activity, stability, and manufacturability. High-throughput production, screening, and characterization platforms play a critical role in bridging computational design and experimental drug discovery.

17:45 Expanding the Therapeutic Potential of Antibodies through Protein Design

Ravit Netzer, Co-Founder & CEO, Scala Biodesign

Advancing therapeutic antibodies requires improving multiple properties in the same molecule. Scala fuses evolutionary information, physics-based calculations, and AI for multiparameter optimization without prior experimental optimization data. Case studies across kappa and lambda antibodies include anti-HER2 and a top-10 pharma partnership: 20 diverse candidates met all six developability criteria while retaining binding affinity, expanding the options teams can advance across antibody formats.

18:00 Advancing CD3 Bispecifics for Solid Tumour Indications

David J. DiLillo, PhD, Executive Director, Immuno-Oncology, Regeneron Pharmaceuticals

Elucidating the mechanisms driving response to CD3 bispecifics, alongside strategies to mitigate toxicity, is critical for expanding and optimising their efficacy in solid tumour indications.

18:30 Rapid Cell-Free Screening of AI Designed Antibody Panels

Stacey Willard, VP of Product Management in Marketing, Nuclera

Antibody campaigns generate large variant panels, but few bind as intended. Validation relies on a 4–8+ week mammalian cycle, wasting resources on non-binders. We present a cell-free protein synthesis (CFPS) workflow to test panels rapidly at scale. Full-length IgG variants express in 96-plex format with SPR kinetics within 14 days. AI-designed anti-PD-1 and anti-IL-6 libraries showed 98–100% expression and >91% concordance with CHO data. CFPS lets teams iterate faster and scale only validated molecules, accelerating the design–test cycle.

19:00 Engineering Bispecific Binding in a Single Domain Antibody via a Novel Paratope

Benjamin J. Hackel, PhD, Professor, Chemical Engineering & Materials Science, University of Minnesota

Bispecific proteins empower immune engagement, logical targeting, and pharmacokinetic modulation. Yet multi-domain antibody bispecifics require challenging engineering and limit delivery. We address this limitation by engineering a β-sheet in single-domain VHH antibodies as a second binding site. Dual-binding VHHs were engineered to multiple targets within multiple parental antibodies. Modularity is evidenced by grafting engineered β-sheets into other VHH, scFv, or IgG and incorporating a dual-binding VHH into a CAR.

19:30 Close of Engineering Antibodies & Beyond Conference

5TH ANNUAL | LISBON, PORTUGAL

MACHINE LEARNING FOR PROTEIN ENGINEERING PART 2

Demonstrating Value and Putting Theory into Practice

THURSDAY 19 NOVEMBER

8:00 Registration and Morning Coffee

KEYNOTE PRESENTATION

8:25 Chairperson's Remarks

Victor Greiff, PhD, Professor, University of Oslo; CTO, IMPRINT



8:30 KEYNOTE PRESENTATION: Data and Baselines in AI for Antibody Design

Charlotte M. Deane, PhD, Professor, Structural Bioinformatics, Statistics, University of Oxford; Executive Chair, Engineering and Physical Sciences Research Council (EPSRC)

I will describe some of the novel computational tools and databases we are pioneering in biotherapeutics and show some of the ways we can better test the methods and offer up a few ways we can build methods that should generate more robust results.

9:00 KEYNOTE FIRESIDE CHAT: GENERATION OF AI-BASED THERAPEUTICS

Moderator: Andrew Buchanan, PhD, FRSC, Head of Discovery, Stealth Mode Biotech

- Bridging the data gap
- Capturing conformational reality
- Choosing the right tool for the right job

Panelists:

Charlotte M. Deane, PhD, Professor, Structural Bioinformatics, Statistics, University of Oxford; Executive Chair, Engineering and Physical Sciences Research Council (EPSRC)

Simon Kohl, PhD, Founder and CEO, Latent Labs

Jinwoo Leem, DPhil, Senior Machine Learning Research Scientist, Isomorphic Labs

Talip Uçar, TechBio Entrepreneur; ex-Boltz, AstraZeneca & NVIDIA

9:30 Far from Equilibrium: Predicting Drug Product Risk in Early Discovery ΛPOHΛ

Shamit Shrivastava, Co-Founder & CEO, Apoha

Machine learning is changing antibody design, but a model can only learn the physics in the training data. Developability data is measured dilute, at rest, but drug products fail at high concentration under stress, through aggregation, gelation or viscosity. Liquid State Intelligence drives micrograms of antibodies through a pinch-off singularity and records how they behave. It yields reproducible axes of behaviour that panels miss, an early measure of risk, and a new kind of data for AI models.

9:45 Lead optimization: Finding the best candidate using a multi-model approach Converge

Shachar Barak, Antibody Engineering Team Lead, Antibody Engineering, Converge Bio Inc

How to combine a generator with expert model screening

10:00 Coffee Break in the Exhibit Hall with Poster Viewing

DE NOVO DESIGN OF PROTEIN THERAPEUTICS: Where Technology Advances Meet Real-World Applications

10:44 Chairperson's Remarks

Norbert Furtmann, PhD, Head, Biologics AI & Design, Computational and AI Strategy, Sanofi

10:45 The Proteina Model Family: From Fundamental Generative AI to Frontier Protein Design

Karsten Kreis, PhD, Principal Research Scientist, NVIDIA Research

Generative AI advanced first in images and language, then reached biology. We trace that path through the Proteina model family: scalable transformers and flow matching (Proteina), latent representations (La-Proteina), inference-time search (Proteina-Complexa) and reasoning (RFD4-Proteina). Experimental validation spans more than a million designs against 125 targets, picomolar binders, *de novo* enzymes and the first *de novo* binders for a free carbohydrate. We close with reinforcement–learning post-training.

11:05 *De novo* VHH Design in Practice: Bridging AI Innovation with Real-World Biologics Design

Norbert Furtmann, PhD, Head, Biologics AI & Design, Computational and AI Strategy, Sanofi

This presentation will provide a pharma industry perspective on translating *de novo* protein design from computational promise to therapeutic reality. We will showcase Sanofi's integrated approach to VHH discovery, featuring our computational *de novo* design toolbox and its seamless integration with specialized wet-lab workflows.

11:25 Efficient Generation of Epitope-Targeted *de novo* Antibodies with Germinal

Claudia Driscoll, PhD, Postdoctoral Fellow, Generative Biology Institute, Ellison Institute of Technology

Obtaining novel antibodies against specific protein targets is experimentally laborious. We introduce Germinal, a generative pipeline that designs functional antibodies against specific epitopes while requiring minimal experimental screening (tens of designs per antigen). Our method integrates AlphaFold-Multimer with an antibody-specific language model for *de novo* CDR design. Across four

5TH ANNUAL | LISBON, PORTUGAL

MACHINE LEARNING FOR PROTEIN ENGINEERING PART 2

Demonstrating Value and Putting Theory into Practice

diverse targets and formats, Germinal successfully generated antibodies with high novelty and robust mammalian expression

11:45 AI for Biologics: Transition from Discovery to Design

Yu Qiu, PhD, Executive Director, Biologics Design and Technology, AstraZeneca

This presentation will detail AstraZeneca's journey in leveraging machine learning for protein therapeutics. I will discuss our progress and methodology transitioning from CDR design, developability prediction, active learning for lead optimisation, and mini-protein design to our current advancements in *de novo* antibody design.

12:05 Session Break

12:15 LUNCHEON PRESENTATION: Pythia-1: Directed Design of Developable Human IgGs — from Soluble Targets to GPCR Agonism

PYTHIA

Peter Bowers, PhD, Head of Research, Pythia Labs

Pythia-1 enables the directed design of full-length human IgGs against soluble and membrane targets using specified structures and epitopes. Screening no more than 48 designs per target yields antibodies with low-nanomolar affinity, favorable developability profiles, and potent cellular activity, including both GPCR antagonism and agonism. This talk will highlight the ability to program antibody function through structure-guided design and discuss progress toward advancing these antibody panels into drug candidates supported by *in vivo* data.

12:45 Luncheon in the Exhibit Hall with Last Chance for Poster Viewing

FROM STRUCTURE PREDICTION TO *DE NOVO* VACCINE DESIGN

14:00 Chairperson's Remarks

Monica L. Fernandez-Quintero, PhD, Associate Professor, Department of Microbiology and Immunology, Novo Nordisk Foundation Initiative for Vaccines and Immunity (NIVI)

14:05 Structural Plausibility without Binding Specificity: Limits of AI-Based Antibody-Antigen Structure Prediction Confidence Scores

Eva Smorodina, PhD, Computational Structural Biologist, University of Oslo

We present a controlled framework for evaluating binding specificity using 106 experimental nanobody-antigen complexes and 11130 shuffled non-cognate pairings. Benchmarking AlphaFold3, Boltz-2, and Chai-1 showed that although predicted complexes were often geometrically plausible, internal confidence scores (e.g., ip) failed to distinguish correct from incorrect pairings, and increased sampling improved refinement but not discrimination. We therefore conclude that confidence scores require validation against realistic decoys and release 1.8 million AI-generated complexes.

14:35 Directed Evolution Informs Divergent Pathways of Antibody Affinity Maturation

Daniel Bader, Graduate Student, Scripps Research Institute

Directed evolution provides a powerful framework to study and engineer antibody affinity maturation *in vitro*, thereby informing rational boost immunogen design to steer *in vivo* evolution toward optimal neutralising activity. Dissecting closely-related HIV bnAb lineages, we show that minor structural variations, such as differences in LCDR3 loop length, direct distinct evolutionary pathways and determine the optimal amino acid configurations for epitope recognition.

15:05 Accelerating Biologics Discovery with Closed-Loop Agentic AI and Wet-Lab Execution

Alloy Therapeutics

Cedric Weber, PhD, Chief Scientific Officer, Data Science & Bioinformatics, Alloy Therapeutics, Inc.

As frontier AI models become more accessible, biologics discovery differentiation depends on proprietary data, specialized tools, integrated workflows, and wet-lab validation. Alloy's agentic platform connects these capabilities, enabling AI agents to analyze assay data, identify validated binders, flag developability risks, and optimize affinity and developability. Experimental feedback informs scientist-in-the-loop decisions, creating a closed-loop make–test–learn system to accelerate discovery and improve candidate quality.

INTERACTIVE DISCUSSIONS

15:35 Find Your Table and Meet Your Moderator

Interactive Breakout Discussions are informal, moderated discussions, allowing participants to exchange ideas and experiences and develop future collaborations around a focused topic. Each discussion will be led by a facilitator who keeps the discussion on track and the group engaged. To get the most out of this format, please come prepared to share examples from your work, be a part of a collective, problem-solving session, and participate in active idea sharing. Please visit the Interactive Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

5TH ANNUAL | LISBON, PORTUGAL

MACHINE LEARNING FOR PROTEIN ENGINEERING PART 2

Demonstrating Value and Putting Theory into Practice

TABLE 1: Appropriate Use of Agentic AI in the Lab

M. Frank Erasmus, PhD, Head, Bioinformatics, Specifica, an IQVIA business

Monica L. Fernandez-Quintero, PhD, Associate Professor, Department of Microbiology and Immunology, Novo Nordisk Foundation Initiative for Vaccines and Immunity (NIVI)

- Where can agentic AI meaningfully accelerate research?
- How should and can AI-generated outputs be verified, and what level of human intervention is required?
- How do we protect unpublished data, ensure reproducibility, and maintain scientific standards?
- What tools, workflows, training, and policies are needed for responsible incorporation in academic environments?
- How does increasing autonomous AI systems change the way research is conducted, and where should we step in?

TABLE 2: An AI-Powered Biofoundry for Protein Discovery and Engineering

Huimin Zhao, PhD, Steven L. Miller Chair Professor, University of Illinois Urbana Champaign

- AI-powered protein discovery and engineering
- Infrastructure and interoperability
- Economic impact and industrial adoption
- Workforce and collaboration models

AGENTIC AI AND SELF-DRIVING LABS FOR BIOLOGICS DISCOVERY

16:14 Chairperson's Remarks

M. Frank Erasmus, PhD, Head, Bioinformatics, Specifica, an IQVIA business

16:15 An AI-Powered Biofoundry for Protein Discovery and Engineering

Huimin Zhao, PhD, Steven L. Miller Chair Professor, University of Illinois Urbana Champaign

Proteins have promised to solve many grand challenges of modern society. However, the existing processes for discovery, characterisation, and engineering of proteins are slow, expensive, and inconsistent. To address this limitation, my lab has been developing an AI-powered biofoundry since 2013. In this presentation, I will highlight a few representative accomplishments. In addition, I will discuss our efforts in making our AI-powered biofoundries accessible to the broader research community.

16:45 Integrating Physics & Deep Learning for Antibody Design

Joost Schymkowitz, PhD, Professor & Group Leader, Switch Lab, VIB-KU Leuven

While deep learning has transformed protein design, purely data-driven methods struggle to generalise novel targets and lack physical grounding. We present a computational pipeline that integrates a physics-based force field with evolutionary sequence optimisation for *de novo* antibody design. Our approach jointly optimises binding affinity, stability, and developability. Benchmarks demonstrate that physics-informed methods match state-of-the-art ML approaches on antibody binding prediction while offering interpretability without target-specific training data.

17:15 Effects of Protein Interface Mutations on Protein Quality and Affinity

Victor Greiff, PhD, Professor, University of Oslo; CTO, IMPRINT

Antibody–Antigen affinity measurements often conflate protein interaction with folding, stability, and expression. Using deep mutational scanning across four VHH-antigen complexes, we introduce control binders to disentangle these effects for single and double mutations in both partners. Benchmarking structure- and sequence-based models reveals that predictive performance largely reflects protein quality rather than intrinsic binding affinity, highlighting a critical confounder and the need for disentangled datasets to advance accurate affinity prediction models.

17:45 Close of Summit

4TH ANNUAL | LISBON, PORTUGAL

ANTIBODY-BASED THERAPIES

New Formats. New Modalities. New Therapeutic Reach.

TUESDAY 17 NOVEMBER

7:30 Registration and Morning Coffee

EMERGING MODALITIES FOR AUTOIMMUNE DISEASES

8:25 Chairperson's Remarks

Rocky Strollo, MD, PhD, Associate Professor, Endocrinology, San Raffaele University of Rome

8:30 A Novel Antibody Approach to Pan-Subclass IgG Reduction

Ibo Janssens, PhD, Senior Scientist, Preclinical Product Development, argenx BVBA

Ig-ABDEG is a first-in-class, Fc-silenced IgG sweeping antibody designed to achieve rapid, deep, and sustained pan-subclass IgG reduction while preserving a favorable safety profile. Ig-ABDEG enables efficient lysosomal clearance of all IgG subclasses without affecting other immunoglobulins, FcRn integrity, or albumin levels. This mechanistically differentiated approach supports chronic use in IgG mediated diseases, with a first-in-human study currently ongoing.

9:00 Fc-Engineered Anti-PD-1 for Selective Depletion of Pathogenic T Cells in Autoimmunity

Alexander Rau, PhD, Senior Scientist, Protein Engineering, Anaveon AG

ANV200 was developed as Fc-engineered antibody with optimised FcγRIIIa and FcγRIIb engagement. In PBMC and whole-blood assays, ANV200 induced deeper depletion of activated PD-1+ T cells than benchmark antibodies and shifted the T cell compartment toward naïve populations. In a xenogeneic GvHD model, ANV200 suppressed expansion of PD-1+ T cells, reduced disease progression, and provided complete protection from mortality, supporting ANV200's advancement into clinical development.



9:30 KEYNOTE PRESENTATION: Unlocking New Horizons: Anti-CD89 Antagonist Antibodies as Game-Changers in Treatment of IgA-Driven Autoimmune Disease

Marjolein van Egmond, PhD, Professor, Oncology and Inflammation, Surgery/Molecular Cell Biology and Immunology, Amsterdam UMC

Recent evidence shows that many autoimmune diseases involve IgA autoantibodies that drive pathology. Targeting the IgA Fc receptor (CD89) with anti-CD89 antibodies disrupts these harmful interactions, offering a novel therapeutic mechanism to alleviate symptoms and disease progression. This keynote will present the latest research, therapeutic potential, and clinical results of novel anti-CD89 monoclonal antibodies, highlighting their innovative role in managing IgA-mediated autoimmune disorders and transforming treatment strategies.

10:00 Novel Therapeutic Human VH Bispecific Protein & mRNA-LNP Applications Enabled by HCAb Harbour Mice®

Rene Hoet, Senior Scientific Advisor, Business Development, Nona Biosciences

- Human single heavy chain domain (HCAb) platform & full IgG (H2L2) platforms allow flexibility in design and number of binding modules to select optimal biological and developability properties for multispecifics with multiple molecules moved into clinical trials.
- A TransferinR1 (TrR1) specific human VH from Harbour mice enables improvement of therapeutic bispecific brain delivery.
- Bispecifics encoded human VH only mRNA liposomes show efficacy in preclinical *in vivo* ONC models.
- Conjugation of VH to mRNA encoded CAR constructs significantly improve the transfection efficacy of human T cells for *in vivo* CAR-T therapy.

10:15 Precision by Design: VHH Affinity, Specificity, and Site-Specific Conjugation for ADCs, AOCs, and LNPs

Lurdes Rodrigues-Duarte, Director, Research & Development , Isogenica Ltd.

Targeted delivery programs strongly rely on the quality of their targeting component. VHHs engineered with a C-terminal cysteine handle enable precise, site-specific conjugation across ADCs, AOCs, and LNPs without compromising yield or binding performance. Proof-of-concept ADC data, alongside affinity and specificity data, demonstrates what conjugation-ready VHH design looks like in practice and what it means for building targeted delivery programs on a single, versatile platform.

10:30 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing

NOVEL ANTIBODIES AND NEW THERAPEUTIC APPLICATIONS

11:15 Bispecific IgA to Enhance Neutrophil-Mediated Killing of Neuroblastoma Without Side Effects

Jeanette Leusen, PhD, Professor AntibodyTherapy, University Medical Center Utrecht

Two novel bispecific IgA molecules were designed to target GD2 and CD47 on neuroblastoma. Both formats effectively activated neutrophils, promoted uptake of neuroblastoma cells via trogocytosis, and induced neutrophil-mediated killing comparable to the combination of IgA3.0 and CD47 blockade in samples from healthy donors and patients. The bispecific containing a SIRPαD1-based CD47-targeting

ANTIBODY-BASED THERAPIES

New Formats. New Modalities. New Therapeutic Reach.



arm exhibited minimal off-tumor activity against GD2-negative cells, while achieving near-complete clearance of GD2-positive tumor cells *in vivo*.

11:45 Multibody Engineering for Next-Generation Therapeutic Applications

Yehezkel Sasson, PhD, Senior Vice President, Technology Development, Biolojic Design Ltd.

Multibodies introduce a new paradigm for multispecific biologics: a single Fab arm engineered to recognise two distinct antigens. By embedding multispecificity within a conventional IgG architecture, Multibodies enable new therapeutic designs while maintaining simplicity, manufacturability, and modularity. This presentation will introduce the technology, highlight BD200 as a case study of Multibody drug conjugates, and discuss how the platform creates new opportunities for ADCs, TCEs, masked antibodies, and other therapeutic modalities.

12:15 LUNCHEON PRESENTATION: The Diversity Paradox: What CD28 Reveals About Antibody Discovery Across Platforms

Tracey Mullen, Chief Strategy Officer, Mosaic Biosciences Inc

More discovery platforms should mean more antibody diversity. Right? We put that assumption to the test using CD28, interrogating the same target through hybridoma, single B-cell, immune and naïve display, and alpaca VHH discovery approaches. Rather than simply counting hits, we examined what each platform delivered across sequence diversity, epitope recognition, binding kinetics, and developability. The resulting dataset revealed some unexpected complexities and raised important questions about how we define diversity, evaluate discovery success, and select complementary technologies. What happens when you look beyond the hit count? The answer may change how you think about antibody discovery.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

BEYOND MABs: TARGETED PROTEIN DEGRADATION AND NOVEL MOAs

14:00 Chairperson's Remarks

Tomasz Sitar, PhD, Head, Drug Discovery, JJP Biologics

14:05 Beyond Inhibition: SureTAC for Precision Membrane Protein Removal

Revina Van Scherpenzeel, PhD, Principal Scientist, Laigo Bio

Membrane proteins and receptors drive diseases such as cancer and autoimmune disorders. Instead of blocking them, selective degradation—including of "undruggable" receptors—enables deeper and longer pathway inhibition. SureTAC (Surface Removal Targeting Chimeras) are bispecific antibodies that harness the endolysosomal system to degrade membrane proteins by recruiting E3 ligases, effectively removing targets from the cell surface *in vitro* and *in vivo*. Laigo Bio is advancing SureTAC across oncology, inflammation, and autoimmune diseases.

14:35 EpiTAC Bispecific Antibodies Degrade Oncogenic Targets to Solve Limitations of Current Clinical Therapeutics

Shyra J. Gardai, PhD, CSO, EpiBiologics

EpiBiologics EpiTAC bispecific antibodies degrade receptor tyrosine kinases (RTKs) independent of their form. Removal of the oncogenic RTK and associated scaffolding function is differentiated from blockade approaches. Tissue-selective EpiTACs degrade EGFR, cMET, and cKIT to drive deep, prolonged anti-tumour activity. EPI-326 is a novel tissue selective EGFR approach to address the limitations of current EGFR drugs. A Phase I study in patients with HNSCC and mutant EGFR NSCLC is ongoing.

15:05 POSTER HIGHLIGHT: Engineering Trop2-Targeted Degrader-Antibody Conjugates for Triple-Negative Breast Cancer: A Comparative Oncology Approach

Rafaela Marimon, Researcher, Antibody Engineering, University of Lisbon

Triple-negative breast cancer (TNBC) is an aggressive human breast cancer with limited targeted treatment options. We are developing Trop2-targeted degrader-antibody conjugates (DACs) that combine Trop2-specific single-domain antibodies with PROTACs targeting oncogenic proteins. Using human breast cancer and feline mammary carcinoma as complementary comparative oncology models, we will evaluate DAC activity, pharmacokinetics and safety *in vitro* and *in vivo*, advancing cross-species translation of targeted protein degradation.

15:20 POSTER HIGHLIGHT: CM101: A Cell-Penetrating VHH for Intracellular Immune Checkpoint Inhibition

Miriam Aarsund Larsen, PhD, CEO, Cellmover

Intracellular immune checkpoints represent an untapped therapeutic opportunity. While current immune checkpoint inhibitors target extracellular receptor–ligand interactions, inhibitory signaling is mediated intracellularly. Cellmover is developing CM101, a cell-penetrating VHH designed to block intracellular immune-checkpoint signaling, overcome T-cell suppression, and restore T-cell activity in immunosuppressive tumor environments, offering a novel approach to cancer immunotherapy.

15:35 Speed Without Compromise –Tailored CHO.RiGHT® Cell Line Development for Any Antibody Format

Anneliese Krueger, Scientist, Pharmaceutical Cell Line Development, ProBioGen AG

ProBioGen established a fully optimized workflow that enables the rapid development of stable, high-yielding CHO cell lines, even for structurally complex antibodies. The DirectedLuck® transposase ensures a stable and robust clone pool expression .This is achieved by advanced epigenetic targeting

ANTIBODY-BASED THERAPIES

New Formats. New Modalities. New Therapeutic Reach.



to the most active genomic sites. Complementary to this highly efficient gene delivery, our flexible, automated clone screening robotic system PSi.Bot and early high-throughput product analytics enable real-time decision-making and the early identification of high-performing clones. This combined approach sets new benchmarks for speed, scalability, and reliability in therapeutic protein development. It demonstrates that even the most complex biologics can be efficiently produced when all elements of cell line development are optimally aligned and finely tuned.

16:05 Refreshment Break in the Exhibit Hall with Poster Viewing

ANTIBODIES TO WATCH

16:50 Antibodies to Watch in 2027

Silvia Crescioli, PhD, Independent Consultant

This presentation will provide a preview of key insights from Antibodies to Watch in 2027, including a review of antibody therapeutics first approved in 2026, those currently under regulatory review, and a projection of candidates likely to enter regulatory review by the end of 2027. The talk will also feature a focused analysis of emerging trends shaping the antibody therapeutics landscape, offering a data-driven perspective on innovation and pipeline evolution.

BEYOND MABs: RADIOPHARMACEUTICALS AND NEXT-GEN CONJUGATES

17:20 DARPins for Targeted Alpha Therapy: From Promising MP0712 First-in-Human Data to Opportunities for Next Radio-DARPin Candidates

Christian Reichen, PhD, Director, Oncology Research, Molecular Partners AG

DARPins are small, high-affinity protein scaffolds with promise as delivery vectors for targeted radiopharmaceutical cancer therapy. This presentation outlines preclinical strategies to advance radio-DARPin Therapeutics (RDT) toward clinical evaluation, focusing on enhanced tumour uptake and reduced kidney exposure. First patient images from compassionate care with MP0712, a DLL3-targeting 212Pb-based RDT, demonstrate selective uptake in primary and metastatic SCLC lesions, providing early clinical proof-of-concept for the RDT platform.

17:50 Targeting CEACAM5 with Lutetium-177-Conjugated Affibody Molecules

Torbjörn Gräslund, PhD, Professor, Department of Protein Science, KTH Royal Institute of Technology

Carcinoembryonic antigen adhesion molecule 5 (CEACAM5) is overexpressed in a subset of patients with colorectal carcinomas, mucinous carcinomas of the ovary and breast, and small-cell lung carcinomas, with minimal expression in normal tissue. We have developed affibody molecules that specifically target CEACAM5-overexpressing tumours and loaded them with lutetium-177. Preclinical studies in mice showed that the constructs can be used to efficiently treat CEACAM5-overexpressing pancreatic tumours with minimal side effects.

PREDICTIVE ANTIBODY PHARMACOKINETICS FOR CANDIDATE SELECTION

18:20 Beyond the Monkey: Humanized FcRn Mouse Models for Predictive Antibody Pharmacokinetics

Adriano Flora, Ph.D., Director of Business Development, Europe, The Jackson Laboratory

Selecting the appropriate antibody candidate depends on the confidence that preclinical PK data will be predictive in humans. This presentation summarizes the evaluation of the effectiveness of the Tg32 and Tg276 humanized FcRn mouse models in predicting human antibody pharmacokinetics, including both standard and half-life-extended molecules. By analyzing a comprehensive translational dataset, we will cover allometric scaling, comparisons with non-human primates, and strategies to mitigate ADA, emphasizing their roles in lead optimization and candidate selection.

18:50 Welcome Reception in the Exhibit Hall with Poster Viewing

19:50 Close of Antibody-Based Therapies Conference

INAUGURAL | LISBON, PORTUGAL

BIOLOGICS FOR AUTOIMMUNE DISEASES

Where Engineering Innovation Meets Emerging Modalities and Novel MOA



WEDNESDAY 18 NOVEMBER

7:30 Registration and Morning Coffee

EMERGING MOAs IN AUTOIMMUNE DISEASE

8:25 Chairperson's Remarks

Jyothsna Visweswaraiah, PhD, Vice President, Drug Creation, Seismic Therapeutic

8:30 Engineering a TL1A × IL-23 Bispecific Antibody for Dual Cytokine Blockade in IBD

James Ernst, PhD, Executive Director, Xencor, Inc.

XmAb412 is a half-life–extended bispecific antibody targeting TL1A and IL-23p19, key drivers of pathogenic T cell responses in IBD. Will describe the discovery, engineering, and optimisation of XmAb412, as well as the discovery and development of XmAb942, a TL1A monospecific antibody currently in clinical evaluation. *style="font-size: 12px;">In vitro* and *style="font-size: 12px;">in vivo* data demonstrating potent activity and favourable pharmacokinetics, supporting the clinical development and best-in-class potential of both molecules, will be presented.

9:00 Engineering Simultaneous Targeting of IL-4Ra and IL-33 Pathways to Broadly Suppresses Autoimmune Inflammation

Genevieve Desjardins, PhD, Associate Director, Protein Engineering, Zymeworks

ZW1528, a bispecific antibody targeting IL-4Ra and IL-33, mediates simultaneous blockade of type 2 and non-type 2 inflammation resulting in improved control of inflammatory responses *in vitro* and *in vivo*. ZW1528 was engineered to have optimal activity through extensive molecular design and a suitable developability profile by rational design and computational optimization. This engineering led to improvements in activity, pharmacokinetic properties, and manufacturability profile.

9:30 Characterisation of a Biparatopic Sweeping Antibody

Jasmin Sydow-Andersen, PhD, Matrix & Science Lead LMR, Molecular Characterization, Roche Diagnostics GmbH

The molecular design of the sweeping antibody is a sophisticated, humanised biparatopic antibody for cytokine neutralisation, targeting two distinct epitopes on the cytokine antigen. It incorporates "target-sweeping" SMART-Ig technology with an engineered Fc region for improved recycling. *In vitro* assays demonstrate its potency in inhibiting monocyte migration, and *in vivo* non-human primate studies validate its mechanism of action, resulting in significantly reduced systemic levels of the free antigen.

10:00 Comprehensive Solutions for Antibody Drug Development for Autoimmune Diseases

Salih Kucuk, PhD, Technical Support, ACROBiosystems

This talk outlines how ACROBiosystems supports antibody programmes in autoimmune disease at each stage of development. Using the TL1A–DR3 pathway in inflammatory bowel disease as a case study, we examine why a target protein that reproduces the native, trimeric structure underpins key antibody discovery and how verifying its bioactivity across binding and cell-based assays improves reproducibility and saves time better spent on research. We then look at how purpose-built screening tools, from high-throughput inhibition assays benchmarked against clinical-stage antibodies to functional reporter cell lines, help narrow a large candidate pool to the key promising molecules. We close with the analytical and quality control requirements of therapeutic antibody manufacturing, where safety and purity testing decisions made early determine how smoothly a candidate moves from discovery toward clinical translation.

10:15 Developing Novel Therapeutics Against Autoimmune Diseases with AI Immunology™

Birgitte Rono, CSO, R&D, Evaxion Biotech AS

Current autoimmune therapies often broadly suppress immune function without addressing the underlying loss of immune tolerance. In this talk, we demonstrate how Evaxion's AI-Immunology™ platform, clinically validated in oncology, is being extended to autoimmunity through two novel approaches: a tolerogenic DNA vaccine inducing antigen-specific regulatory T cells and an AI-designed autoantibody binder with potential for development across multiple therapeutic modalities. Together, these advances illustrate the potential of AI-driven, antigen-specific approaches to treating autoimmune diseases.

10:30 Coffee Break in the Exhibit Hall with Poster Viewing

11:15 S-6204: A Next-Generation IgE Targeting Therapy for Allergic and Atopic Diseases

Jyothsna Visweswaraiah, PhD, Vice President, Drug Creation, Seismic Therapeutic

Current anti-IgE therapies neutralise free IgE but only slowly reduce FceRI-bound IgE, delaying effector cell disarmament. Seismic's IgE dissociator, S-6204, binds free IgE, prevents FceRI engagement and actively ejects IgE from FceRI on mast cells and basophils without triggering their activation. This drives faster FceRI downregulation and, by rapidly disarming effector cells, S-6204 could offer superior efficacy over IgE neutralisation for allergic and atopic diseases.

INAUGURAL | LISBON, PORTUGAL

BIOLOGICS FOR AUTOIMMUNE DISEASES

Where Engineering Innovation Meets Emerging Modalities and Novel MOA



11:45 FEATURED PRESENTATION: A New Frontier for the Treatment of Autoimmune Diseases: T Cell Engager Therapies Targeting CD19 or BCMA

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

T cell engagers (TCEs) have emerged as a successful modality in oncology with high response rates and a favorable safety profile, and more recently have shown therapeutic promise for the treatment of autoimmune diseases. In particular, TCEs designed to redirect cytotoxic T lymphocytes to target B cell lineage antigens, such as CD19 and BCMA, present an exciting opportunity to eliminate pathogenic cells and induce immune reset.

12:15 Attend Concurrent Sessions

12:45 Luncheon in the Exhibit Hall with Poster Viewing

ENGINEERED CELL- AND GENE-BASED THERAPIES

14:00 Chairperson's Remarks

Rene Hoet, PhD, Scientific Advisor, Nona Biosciences and Hoet Consultancy BV

14:05 TCR Engineered Tregs for Celiac Disease

Yannick Muller, PhD, Assistant Professor, Allergology & Innovative Immunological Therapies, CHUV

A strict gluten-free diet remains the primary management strategy for coeliac disease, despite its social cost and difficulty of adhering to it. We describe an approach using engineered regulatory T cells expressing gluten-specific TCRs. eTregs suppressed gluten-reactive effector T cells *in vitro* and *in vivo*, including through bystander mechanisms. As eTreg therapies advance clinically in other indications, this strategy offer a promising translational pathway for restoring tolerance in coeliac disease.



14:35 KEYNOTE PRESENTATION: A Novel Approach to Enhance Tissue-Specific Gene Delivery

Yang Shen, PhD, Executive Director, Antibody Engineering, Bispecifics, Regeneron

The use of adeno-associated virus (AAV) for gene-therapy delivery shows significant potential in treating various muscle diseases. We have developed a bispecific antibody that binds to AAVs and retargets them to skeletal muscles via a muscle-specific protein. This approach enables enhanced AAV transduction in skeletal muscles while greatly reducing off-target transduction in other tissues.

15:05 Special Presentation: Post-Translational Modified Insulin Neoepitopes—Potential Targets in Type 1 Diabetes Diagnosis and Treatment

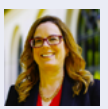
Nelig Le Goux PhD, Postdoctoral Research Assistant, Antibody Engineering Platform, Queen Mary University of London

Rocky Strollo, MD, PhD, Associate Professor, Endocrinology, San Raffaele University of Rome

Our research investigates how disease- and tissue-specific pathogenic proteins form, and exploits them to develop targeted diagnostics and therapies. We showed that autoimmune responses to oxidative post-translationally modified proteins (oxPTMs) occur in autoimmune diseases. In type 1 diabetes (T1D), antibodies against oxPTM-insulin appear before clinical onset. Using a T1D donor-derived antibody library, we generated oxPTM-insulin-specific monoclonal antibodies that bind inflamed pancreatic islets, with potential impact on T1D diagnosis and treatment.

15:35 Transition to Keynote session

PLENARY KEYNOTE SESSION



15:45 Chairperson's Remarks

Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC



15:50 The Making of Multispecific Antibodies—A Clinical Perspective

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

- How has the field of multispecific antibodies evolved in recent years?
- What are the modes of action utilised by multispecific antibodies?
- What are the frequently used targets and target combinations?
- What are the emerging applications?



16:00 The Future of T Cell Engagers

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

- TCE approvals are catching up with ADC approvals
- Compelling single-agent activity in blood-borne and solid tumor indications
- Diverse formats and targets work for TCEs
- Several ways to augment the efficacy and safety of TCEs: hundred percent response rates at reach

INAUGURAL | LISBON, PORTUGAL

BIOLOGICS FOR AUTOIMMUNE DISEASES

Where Engineering Innovation Meets Emerging Modalities and Novel MOA

- Treatment of minimal residual disease and target combinations
- Recent highlights pointing at the future of TCEs

16:10 FIRESIDE CHAT: Emerging Modalities and the Future of Antibody Engineering






Moderator: Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

- Bispecific antibodies and T cell engagers
- Design principles
- Complex formats: Trispecifics and costimulation
- Bispecifics compared to ADCs or CAR-T
- Next frontiers beyond cancer

Panelists:

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

Ulrike Philippar, PhD, Vice President Oncology, Global Head of Discovery, Johnson & Johnson Innovative Medicine

16:50 Refreshment Break in the Exhibit Hall with Poster Viewing

YOUNG SCIENTIST MEET-UP

IN-PERSON ONLY: Young Scientist Meet Up

Raphaelle Drean, PhD, Project Manager, Scientist, R&D, Affilogic

Iris Goldman, Conference Producer, Cambridge Innovation Institute

Leire Oyon, Research Scientist, Protein Crystallography Unit, Navarrabiomed

Isabel Waibel, Graduate Student, Biochemical Engineering, ETH Zurich

The young scientist meet-up is an opportunity for scientists entering the field to develop connections across institutions, and for established leaders to come build relationships with the next generation of scientists. The meet-up will pave the way for mentorships, professional opportunities, and scientific discovery.

- Get to know fellow peers and colleagues
- Make connections and network with other institutions
- Inspire others and be inspired!

NEXT-GENERATION TARGETS AND DISEASE-SELECTIVE BIOLOGY

17:30 Targeting Leukocyte Trafficking Upstream of α4β7: Antagonism of the Cannabinoid GPCR CB2R as a Therapeutic Mechanism in Crohn's Disease

David O'Connell, PhD, Associate Professor, Biomolecular & Biomedical Science, University College Dublin

Leukocyte trafficking is targeted in Crohn's disease by blocking a4ß7/MAdCAM-1-mediated travel of leukocytes to mucosal tissues in the gut. In an alternative approach, we antagonise the cannabinoid receptor CB2R on leukocytes with a novel biologic miniprotein, effectively regulating expression of a4ß7 and significantly reducing leukocyte trafficking to the gut. Detailed *in vitro* functional characterisation assays and preclinical studies of the mechanism of action *in vivo* will be presented here.

18:00 SMACk: A Modular Platform for Sterically Masked Activated Cytokines

James T. Koerber, PhD, Distinguished Scientist and Senior Director, Antibody Engineering, Genentech, Inc.

Cytokines are critical signalling molecules, but their therapeutic potential remains unrealised due to pleiotropic effects across cell types. Here we describe a simple, highly modular format called a Sterically Masked Activated Cytokine (SMACk), via facile assembly of a targeting Fab/VHH, cytokine, and Fc. We will describe the engineering strategy, mechanistic work, and functional data highlighting the application to multiple distinct cytokines.

18:30 IMC-S118AI: Beta Cell–Targeted Bispecific for Type 1 Diabetes (T1D) Disease Modification

Tara Mahon, PhD, Principal Scientist II, Target Biology, Inflammation and Autoimmune Diseases, Immunocore Ltd.

Immunocore has developed ImmTAAI, a new class of bispecific protein therapeutics designed to deliver targeted immunomodulation to treat autoimmune diseases. IMC-S118AI comprises a high-affinity TCR that recognises a peptide from pre-proinsulin presented by HLA-A*02:01 on beta-cells and a PD-1 agonist effector arm, intended for disease-modifying treatment in T1D. Based on compelling preclinical data, we are advancing this molecule into Ph1/b clinical studies in patients with T1D in 2026.

19:00 Close of Biologics for Autoimmune Diseases Conference

5TH ANNUAL | LISBON, PORTUGAL

ANTIBODIES AGAINST CHALLENGING TARGETS

Biotherapeutic Innovation for Complex Target Biology

THURSDAY 19 NOVEMBER

8:00 Registration and Morning Coffee

GPCR, ION CHANNEL AND TRANSPORTER TARGETS

8:25 Chairperson's Remarks

David O'Connell, PhD, Associate Professor, Biomolecular & Biomedical Science, University College Dublin

8:30 SSTR5 Agonist for Post-Bariatric Hypoglycemia

David Felix, Team Lead, Antibody Discovery, Confo Therapeutics

We describe the discovery and characterisation of CFTX-2034, a first-in-class agonist antibody targeting SSTR5, which plays a critical role in modulating GI motility, insulin, and incretin release. This offers a novel therapeutic approach for post-bariatric hypoglycemia, a serious complication of bariatric surgery that can lead to life-threatening hypoglycemic events. Its unique mechanism of action, robust preclinical efficacy, and long *in vivo* half-life position CFTX-2034 as a promising candidate for clinical development.

9:00 Generating Ion Channel-Modulating Antibodies by Fusing Cysteine-Rich Miniproteins into the Antibody Surface

Mark Bushell, PhD, Director, Technology, Maxion Therapeutics Ltd.

We have shown that small cysteine-rich peptides ("knottins") with ion channel-modulating activity can be inserted into antibody CDR loops while retaining their function. The resulting KnotBody molecules modulate ion channel activity while benefitting from the optimal drug-like properties of antibodies. This presentation will illustrate the generation and optimisation of KnotBody inhibitors of Kv1.3, an important ion channel affecting function of T effector memory cells.

9:30 NativeMP: Full-Length Membrane Proteins for Hit-to-Target Identification of Small Molecules, Peptides, Antibodies, and Artificial Binders

Cube Biotech

Philipp Hanisch, PhD, Head of Laboratory, Cube Biotech GmbH

Cube Biotech's NativeMP platform combines copolymer-based membrane protein stabilisation with automated purification to generate full-length membrane protein targets in a near-native lipid environment. Systematic copolymer screening and biophysical characterisation support target-specific preparation of GPCRs, ion channels, transporters, and other challenging membrane proteins. These preparations enable binding studies across diverse ligand classes, from small molecules and peptides to antibodies, nanobodies, and artificial binders. Integration with scalable binding assays opens opportunities for large-library screening, hit-to-target identification, and subsequent affinity characterisation, connecting membrane protein preparation with discovery workflows.

9:45 The Application of Nanodisc Technology Platforms to Develop Therapeutic mAbs for Multi-Pass Transmembrane Protein Target

DIMA BIOTECH

Donghui Ma, CEO & Founder, DIMA Biotechnology LTD

Many important druggable targets are multi-pass transmembrane proteins. The key challenge is the extreme difficulty in obtaining purified functional proteins. To develop therapeutic lead mAbs on these targets, DIMA has optimized every step of antibody discovery process. In this poster presentation, we will exhibit how we integrate DIMA's Nanodisc technologies, including SyndiscTM, PeptiNanodiscTM, Single B enrichment and DiLibraryTM Mammalian display technology platforms to develop mAbs against a challenge multi-pass transmembrane target, CLDN18.2.

10:00 Coffee Break in the Exhibit Hall with Poster Viewing



10:45 KEYNOTE PRESENTATION: Targeting the Adhesion Class of GPCRs with Biologics for Cancer Therapy

Shohei Koide, PhD, Professor, Biochemistry & Molecular Pharmacology, New York University School of Medicine; Perlmutter Cancer Center, NYU Langone Health

Adhesion GPCRs (aGPCRs) couple adhesion and signalling, and are involved in many cellular functions and contribute to human diseases. Unlike conventional GPCRs, aGPCRs contain large extracellular regions that could provide accessible epitopes. However, aGPCRs remain largely untapped by biologics. I will present strategies to drug aGPCRs, with an emphasis on CD97, and show how targeting aGPCR can expand druggable GPCR space and enable precision cancer treatment.

11:15 Beyond Peptides: Engineering GPCR Agonists for Next-Generation Cardiometabolic Therapeutics

Cody Moore, Director, Platform Development, iBio Inc.

Peptide agonists targeting Class B1 GPCRs often lack clean receptor specificity, even as selective engagement is increasingly linked to differential efficacy and tolerability profiles. We describe an integrated discovery platform coupling AI-designed soluble GPCR analogues with mammalian display. Applied to the amylin receptor family, this approach yields agonists with exquisitely tunable subtype selectivity and function, all with the extended half-life enabled by the antibody format.

11:45 Nanobody Therapy Rescues Behavioural Deficits of NMDA Receptor Hypofunction

Philippe Rondard, PhD, Group Leader, Neuroreceptor Dynamics and Functions, CNRS

We have demonstrated that nanobodies targeting neurotransmitter receptors represent a promising new class of drugs for the treatment of brain disorders. We have developed nanobodies that target a class of glutamate receptors, the metabotropic glutamate (mGlu) receptors, which regulate synaptic

ANTIBODIES AGAINST CHALLENGING TARGETS

Biotherapeutic Innovation for Complex Target Biology

transmission. We identified a nanobody capable of penetrating the brain that potentiates mGlu2 receptor activity. This nanobody restored behavioural deficits in two mouse models exhibiting symptoms of schizophrenia.

12:15 Attend Concurrent Session

12:45 Luncheon in the Exhibit Hall with last Chance for Poster Viewing

STRATEGIES FOR TISSUE- AND COMPARTMENT-SPECIFIC DELIVERY OF BIOLOGICS

14:00 Chairperson's Remarks

Sophie Sanford, PhD, Senior Scientist, Alchemab

14:05 Transferrin Receptor–Mediated Transport Vehicles Enable Delivery of Therapeutic Enzymes to the CNS and Peripheral Tissues

Cathal Mahon, PhD, Associate Director, Protein Technologies, Denali Therapeutics Inc.

The inability of conventional enzyme replacement therapies (ERTs) to effectively reach many disease-relevant tissues limits their therapeutic potential. Enzyme Transport Vehicle (ETV) technology employs transferrin receptor (TfR)-mediated transport to enhance enzyme distribution to the CNS and selected peripheral tissues. This platform enables lysosomal enzyme activity across diverse tissues, supporting the treatment of both neurological and somatic manifestations of lysosomal diseases.

14:35 Bispecific Soluble TCR Engagers for T Cell Inhibition

Rodrigo Vazquez-Lombardi, PhD, Co-Founder & CSO, Engimmune Therapeutics AG

Bispecific soluble TCR engagers are a versatile therapeutic modality combining high-affinity targeting and off-the-shelf use. Initially developed to redirect T cell activation against tumours, this modality is also amenable to targeted T cell inhibition through clustering on tissue-specific targets followed by engagement of inhibitory receptors on T cells. Here we describe the engineering of highly specific, picomolar affinity TCRs designed to inhibit T cell activation in the skin.

15:05 A "Function-First" Approach to Identify Regulatory T Cell-Targeting Antibodies for Immunotherapy

Mark S. Cragg, PhD, Professor, Experimental Cancer Biology, Antibody and Vaccine Group, School of Cancer Sciences, University of Southampton

Tregs are known to impair immunotherapy. Using a "Function-First" biopanning and functional screen followed by target deconvolution, we identified antibodies able to deplete Tregs and elicit tumour control in subcutaneous tumour models. From these, we identified a mAb binding a distinct epitope within ICAM-1 that unexpectedly mediates selectivity towards tumour Tregs. These data validate the target-agnostic discovery approach as a viable means to identify new therapeutic antibodies.

INTERACTIVE DISCUSSIONS

15:35 Find Your Table and Meet Your Moderator

Interactive Breakout Discussions are informal, moderated discussions, allowing participants to exchange ideas and experiences and develop future collaborations around a focused topic. Each discussion will be led by a facilitator who keeps the discussion on track and the group engaged. To get the most out of this format, please come prepared to share examples from your work, be a part of a collective, problem-solving session, and participate in active idea sharing. Please visit the Interactive Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

TABLE 3: How is AI Facilitating the Discovery of Functional Antibodies Against Membrane Targets?

David Felix, Team Lead, Antibody Discovery, Confo Therapeutics

TABLE 4: Brain Delivery of Complex Biotherapeutics: Scientific Challenges and Future Opportunities

Cathal Mahon, PhD, Associate Director, Protein Technologies, Denali Therapeutics Inc.

PHYSIOLOGICALLY RELEVANT DISCOVERY AND SCREENING

16:15 Antibodies from Disease-Resilient Individuals: Targeting the Prostaglandin Pathway with Therapeutic Potential for Parkinson's Disease

Sophie Sanford, PhD, Senior Scientist, Alchemab

At Alchemab Therapeutics we use our unique antibody discovery platform to find novel therapeutics for hard-to-treat diseases. Using patient samples, B cell sequencing, and computational analysis, we identify convergent protective antibody responses among individuals that are susceptible but resilient to specific diseases. We will present our pre-clinical candidate ATLX-PGDHi, a monoclonal antibody targeting the prostaglandin pathway, with potential as a first-in-class disease modifying therapy in Parkinson's disease.

16:45 Discovery of Selective AMY1R Agonist Antibodies: Optimising Potency and Selectivity for Weight Management with Minimal GI Effects

Lauren J. Schwimmer, PhD, Vice President, Preclinical Development, Abalone Bio Inc.

Obesity drugs are hitting a tolerability wall, driven by GI side effects caused by non-specific neuron activation. Selective targeting of AMY1R, a heterodimer of RAMP1 and the calcitonin receptor, promotes weight loss with reduced nausea. Our panel of agonist antibodies with diverse potencies and biases for different members of the amylin/calcitonin receptor family allows us to interrogate the interplay between satiety and nausea to engineer optimized therapeutics for obesity.

17:15 Close of Antibodies Against Challenging Targets Track

SAFETY AND EFFICACY OF BISPECIFIC AND MULTISPECIFIC ANTIBODIES

Enhancing Safety and Creating Synergies with Novel Therapeutic Modalities

TUESDAY 17 NOVEMBER

7:30 Registration and Morning Coffee

TCE SAFETY AND EFFICACY ACROSS MODALITIES

8:25 Chairperson's Remarks

Javier Chaparro-Riggers, PhD, Executive Director, BioMedicine Design, Pfizer Inc.

8:30 Unlocking Target Multiplexing in Solid Cancers with a Novel Single-Chain TCR Bispecific Approach

Fabian Richter, PhD, Director, Immatics Biotechnologies GmbH

Solid cancers can exhibit substantial heterogeneity in tumour-specific antigen expression, both between patients and within individual tumours. Target multiplexing can enable broad antigen coverage; however, efficiently recruiting T cells against multiple structurally distinct targets simultaneously remains challenging. Our novel single-chain TCR bispecifics multiplexing approach is designed to address this limitation by targeting multiple peptide-HLA targets and enabling collaborative T cell recruitment while maintaining favourable developability characteristics.

9:00 ENA101: A First-in-Class Bispecific T Cell Engager Targeting a Peptide Derived from DARKFOX, a Novel Tumour-Specific DARK ANTIGEN Target with Pan-Cancer Expression

Hope Adamson, PhD, Principal Scientist, Protein Biology, Enara Bio

We discovered and validated DARKFOX, an alternative-ORF of FOXM1, which is expressed with high-prevalence, tumour specificity, and homogeneity in major tumour types. A peptide derived from DARKFOX is presented by HLA-A3 (DARKFOX-A3), to which we have developed highly specific, pM-affinity TCR-mimic antibodies. When engineered in our EnTiCE T cell engager platform, ENA101 achieves robust *in vitro* and *in vivo* efficacy alongside a strong CMC profile. IND-enabling studies are in progress.



9:30 Engineering Specific and Potent T Cell Engagers Targeting pHLA

Milos Aleksic, PhD, Senior Director, Drug Discovery, Immunocore LLC

Targeting peptide–HLA complexes with T cell engagers presents two engineering challenges. First, therapeutic molecules must achieve exceptional potency to eliminate cells expressing very low levels of target antigen—often fewer than 100 per cell. Second, they must maintain high specificity despite the vast diversity of self-peptides presented on healthy tissues. This presentation outlines engineering strategies that optimise potency and specificity of TCRs and TCR-mimic antibodies, enabling safe and effective pHLA-directed therapies.

10:00 Current Approaches for Characterizing and Managing Immunogenicity Risk

William Thomas, Immunology Sales Specialist, Sales, ProImmune Ltd

Immunogenicity risk assessment is an essential step in bringing therapeutic drugs to the market. ProImmune's risk management tools evaluate immunogenic epitopes and the corresponding functional T cell responses that can lead to unwanted immune responses. Case studies will highlight how the integrated platform is used to address key questions in the drug development phase.

10:30 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing

11:15 Targeting Alternative T Cell Effector Pathways to Enhance the Anti-Tumour Activity of CD3-Engaging Bispecific Antibodies

David J. DiLillo, PhD, Executive Director, Immuno-Oncology, Regeneron Pharmaceuticals

Preclinical and clinical data support combinations of bispecific antibodies engaging distinct T cell signalling pathways. Co-localising "signal 1" (TCR/CD3) and "signal 2" (costimulation) within the tumour microenvironment by combining CD3-engaging and costimulatory pathway-engaging bispecific antibodies drives superior anti-tumour responses. Integrating signal 3 (cytokine support) through targeted delivery of cytokine signalling also enables deeper and more durable anti-tumour responses for both CD3-bispecifics as well as CAR-T and TCR-T therapies.

11:45 Elucidating the Structure-PK Relationship of Complex Antibody Formats and Understanding the Underlying Mechanisms for Improved Drug Design

Thomas Kraft, PhD, Section Head, Translational DMPK-PD, Senior Principal Scientist, F. Hoffmann La Roche AG

Complex antibody formats enable innovative Fab arrangements, yet their impact on pharmacokinetics remains underexplored. Systematically comparing distinct formats, we identified significant differences in nonspecific clearance driven by FcRn-mediated recycling efficiency rather than uptake. Notably, C-terminal Fab positioning improves FcRn recycling by reducing steric hindrance. These Fv-independent, format-driven properties provide a robust framework to optimise the half-life of next-generation therapies through strategic structural engineering.

12:15 LUNCHEON PRESENTATION: 1 in 3 MAbs Binds Off-Target: How to Predict and Avoid Adverse Events Caused by Polyspecificity

Rachel Fong, Senior Director, MPA Commercial Operations, Integral Molecular

Off-target binding is a significant hurdle in the development of antibody-based therapies, contributing to both drug attrition and adverse events in patients. Recent analysis from our own work identified a surprisingly high off-target rate across the industry, with up to one third of antibody drugs displaying off-target binding. In this presentation, we will discuss the emergence of cell-based protein arrays,

SAFETY AND EFFICACY OF BISPECIFIC AND MULTISPECIFIC ANTIBODIES

Enhancing Safety and Creating Synergies with Novel Therapeutic Modalities

including the membrane proteome array, as an alternative and improved technology to assess antibody specificity.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

IMPROVING THE THERAPEUTIC INDEX

14:00 Chairperson's Remarks

Maria P. MacWilliams, PhD, Vice President Molecular Biology, Tavotek Biotherapeutics

14:05 Next-Generation Tumour-Targeted Masked Cytokines for Enhanced Tolerability and Localised Anti-Tumour Activity

Alexey Berezhnoy, PhD, Senior Director, Immunology, Zymeworks

This presentation will review how combination of potency attenuation and masking increases preferential activity of cytokines on target cell populations; demonstrate activation of conditional cytokine by the combination of cis-engagement and tumor-derived products enriched in the TME; and show that combined strategies of masking, potency attenuation and tumor targeting can be incorporated to widen the therapeutic index.

14:35 A Novel CD123 x Gamma Delta T Cell Engager for the Treatment of Acute Myeloid Leukemia (AML) with a Unique Preclinical Activity and Safety Profile

Patrick Koenig, PhD, Vice President, Biologics, 92bio

We developed an anti-pan-γδ×CD123 T cell engager to overcome toxicities observed during clinical development of CD3×CD123 engagers in AML. Our antibody induced robust γδ T cell-mediated cytotoxicity against AML cells across varying CD123 expression levels, while promoting T cell proliferation and enhancing innate sensing. Despite activity comparable to CD3×CD123 engagers, our pan-γδ bispecific antibody elicited markedly reduced cytokine release and did not induce cytotoxicity against healthy CD123+ monocytes.

15:05 POSTER HIGHLIGHT: Generation of High-Affinity Monoclonal Antibodies Targeting Tumor-Associated Carbohydrate Antigens (TACAs)

Stephan Grunwald, PhD, Head, Biochemistry, Tacalyx GmbH

Tumor-Associated Carbohydrate Antigens (TACAs) are aberrant glycan structures on cancer cell surfaces that promote tumor survival. We developed a discovery and modality-screening pipeline for therapeutic antibodies, including antibody–drug conjugates (ADCs) and T-cell engagers (TcEs) against these challenging, underexplored targets. Lead candidates from two programmes targeting TACAs in pancreatic, colorectal, and other cancers show efficacy in CDX and PDX models.

15:35 Early-Stage Developability Assessment for Bispecific Antibody Lead Optimization and Selection

Lei Guo, Senior Director, CRO Services, WuXi Biologics

BsAbs offer strong therapeutic potential, but complex formats can introduce developability risks, such as aggregation, non-specific binding, and instability. This session introduces early-stage developability assessment that evaluates PK (self-association, non-specific binding, FcRn affinity, and serum stability), biophysical properties, stability, and immunogenicity, highlighting how modality-driven assessment can guide lead optimization, reduce downstream risks, and accelerate bsAb R&D.

16:05 Refreshment Break in the Exhibit Hall with Poster Viewing

TRANSLATIONAL MODELS AND EXPANDED INDICATIONS

16:50 Safety and Efficacy of T Cell Engagers for the Treatment of Refractory Autoimmune Diseases

Joerg Distler, MD, Director of Rheumatology, Hiller-Research Center, University Hospital Düsseldorf, Heinrich-Heine-University Duesseldorf

Autoimmune-mediated connective tissue diseases have a high unmet medical need as they remain diseases with high morbidity and mortality. Here, we review recent experiences on the treatment of severe, previously refractory patients with systemic autoimmune rheumatic disease with T Cell Engagers (TCEs) targeting different B-cell antigens (CD19, CD20, and BCMA) in compassionate use programmes and provide an update on ongoing and planned clinical trials.

17:20 3D Tumour Microenvironments Enable Mechanistic Profiling of ADCs and Immunomodulatory Antibodies

Giacomo Domenici, PhD, Scientist, Advanced Cell Models for Drug Discovery and Translational Research, iBET Instituto de Biologia Experimental Tecnologica

The development of next-generation antibody-based therapeutics requires human-relevant platforms capable of capturing the complexity of tumour–immune and tumour–stroma interactions. Here, we combine advanced 3D microencapsulated tumour microenvironment (TME) models to evaluate both cytotoxic and immunomodulatory antibody modalities. Together, these human 3D TME platforms provide a powerful testbed to de-risk antibody-based strategies, illuminate safety and efficacy determinants, and support the development of next-generation bispecific, multispecific, and immunomodulatory therapeutic antibodies.

18:50 Welcome Reception in the Exhibit Hall with Poster Viewing

19:50 Close of Safety and Efficacy of Bispecific and Multispecific Antibodies Conference

17TH ANNUAL | LISBON, PORTUGAL

ADVANCING MULTISPECIFIC ANTIBODIES AND COMBINATION THERAPY TO THE CLINIC

Novel and Synergistic Combinations

WEDNESDAY 18 NOVEMBER

7:30 Registration and Morning Coffee

NOVEL ENGINEERING APPROACHES

8:25 Chairperson's Remarks

Eric Smith, PhD, Vice President, Bispecific Antibodies, Regeneron Pharmaceuticals, Inc.

8:30 Engineering of Hypoimmunogenic Biotherapeutics through Precision B Cell Targeting

Dikran Aivazian, PhD, CTO & Head, Research, ADAXION Therapeutics

Immunogenicity limits biologic drug development by compromising exposure, efficacy, and safety, particularly for non-human biologics as well as those whose pharmacology inherently drives immunogenicity. ADAXION leverages the B cell checkpoint receptor Siglec-2 (CD22) to selectively silence B cell responses to a therapeutic while preserving the primary pharmacology of the biologic and normal function of the immune system. This targeted approach achieves ADA suppression and improved pharmacokinetics, enabling otherwise immunogenic biologics.

9:00 Antibody-Lectin Chimeras for Glyco-Immune Checkpoint Blockade

Thomas Valerius, MD, Professor, Stem Cell Transplantation & Immunotherapy, Christian Albrechts University of Kiel

Interactions between sugar moieties on cancer cells and Siglecs on effector cells can impair tumour cell killing by therapeutic antibodies. Here, we describe approaches how interference with this checkpoint can improve tumour cell killing by myeloid effector cells—including the novel Ablec technology.

9:30 Discovery and Development of Click-to-Release ADCs with Enhanced Therapeutic Potential

Lars Guelen, PhD, Head of Protein Development, Tagworks Pharmaceuticals

Tagworks is pioneering a new approach to ADCs, based on its Click-to-Release platform, that expands the ADC target scope to non- or slowly internalizing tumour antigens. Following extracellular tumour accumulation and blood clearance of a click-cleavable ADC, a tetrazine trigger molecule is administered i.v. that reacts with a trans-cyclooctene (TCO) linker, releasing the payload and allowing it to enter and kill surrounding tumour cells.

10:00 Building Better Biologics: Eliminating Light Chain Mispairing in IgG-Like Bispecifics

Mario Pereira, PhD, Director of Technical Field Science

The creation of IgG-like bispecific antibodies (BsAbs) is severely limited by light chain (LC) mispairing when co-expressing four unique protein chains. To solve this, we developed Lock-In, a true plug-and-play platform that eliminates LC mispairing. Lock-In enables a seamless transition from standard mAbs to complex bispecifics. This platform fast-tracks BsAb development, scaling to high-titer, high-quality, stable CHO cell lines in just weeks. Lock-In delivers a rapid, scalable solution for developing next-generation IgG-like bispecifics.

10:30 Coffee Break in the Exhibit Hall with Poster Viewing

MAKING MULTISPECIFICS AND MULTIPAYLOAD MOLECULES

11:14 Chairperson's Remarks

Nesrine Chakroun, PhD, Director, Gyes BV



11:15 KEYNOTE PRESENTATION: Developability Profiling, Off-Target Screening, and CDR Engineering to De-Risk Therapeutic Antibodies

Arvind Sivasubramanian, PhD, Director, Computational Biology & Platform Technologies, Adimab LLC

Multispecifics, TCEs, and ADCs require careful developability assessment, as avidity and potent effector functions can amplify unintended interactions. Beyond polyspecificity, stability, and expression, specific off-target binding is a critical dimension, arising from structural mimicry or epitope similarity. This talk presents proteome-scale screening, epitope mapping of identified off-targets, and multi-dimensional CDR engineering to eliminate off-targets while preserving affinity and improving biophysical developability. These approaches enable safer candidates across complex therapeutic modalities.

11:45 Introduction to New-Generation ADCs Based on a First-in-Class Anti-Folate Linker-Drug Platform

Renier Heijkants, PhD, Project Leader, Byondis

Most approved and clinical-stage ADCs use tubulin or topoisomerase I inhibitor payloads. Resistance to these payload classes inevitably develops, highlighting the need for novel payloads with orthogonal mechanisms of action. Byondis is developing anti-folate–based ADCs and will present an update on this linker–drug platform and its lead program.

17TH ANNUAL | LISBON, PORTUGAL

ADVANCING MULTISPECIFIC ANTIBODIES AND COMBINATION THERAPY TO THE CLINIC

Novel and Synergistic Combinations

12:15 LUNCHEON PRESENTATION: 100+ Undruggable Targets Unlocked through Parallel MAb Engineering

Ross Chambers, VP of Antibody Discovery, Integral Molecular

We developed CDR-scanning, a high-throughput method that mutates each antibody CDR residue to all 19 other amino acids. Variant analysis generates a dataset that guides engineering to improve binding, developability, and other properties. Testing against orthologs enables engineering of cross-species reactivity, facilitating preclinical evaluation. CDR-scanning also strengthens antibody genus patent claims by supporting enablement and written description. The resulting datasets can train AI/ML models to improve antibody performance and design

12:45 Luncheon in the Exhibit Hall with Poster Viewing

NOVEL METHODS FOR CONDITIONAL ACTIVATION

14:00 Chairperson's Remarks

Eric Smith, PhD, Vice President, Bispecific Antibodies, Regeneron Pharmaceuticals, Inc.



14:05 KEYNOTE PRESENTATION: Multispecific T Cell Engagers and Co-Stimulation Combinations for the Treatment of Cancer Patients

Ulrike Philippar, PhD, Vice President Oncology, Global Head of Discovery, Johnson & Johnson Innovative Medicine

Within the past decade, therapies that activate/engage T cells have changed the landscape of cancer treatment. Several bispecific T cell engagers have been approved in hematological malignancies and trispecific T cell engagers targeting two tumour-associated antigens are advancing in the clinic. T cell engagers for solid tumours are showing promise, as well as co-stimulatory approaches.

14:35 Next-Generation T Cell Engagers: Leveraging Protease Activation to Overcome Toxicity and Expand the Therapeutic Window

Inja Waldhauer, PhD, Senior Principal Scientist, Roche Innovation Center Zurich

The efficacy of T cell engagers in solid tumours is often limited by systemic toxicities, including on-target/off-tumour effects. Our next-generation approach utilises a conditionally-activated platform designed to restrict T-cell engagement to the tumour microenvironment via tumour-associated proteases. This strategy minimises off-tumour activity and systemic immune activation while maintaining robust anti-tumour efficacy, thereby significantly widening the therapeutic window for treatment.

15:05 Designing Manufacturability into Multispecifics Early: How Integrated CRDMO De-risks Biologics Programs and Accelerates Development

Lauri Peil, Key Account and Technology Officer, Icosagen

- Development of complex biologics is often slowed by late-stage discovery of manufacturability and developability challenges.
- We present a CRDMO-based approach that combines transient expression, early process development, and analytical characterization to generate critical knowledge before final candidate selection.
- Using case study comparing transient and stable production material, we demonstrate how earlier assessment of manufacturability risks can support faster, lower-risk, and more cost-effective development pathways.

15:35 Transition to Keynote session

PLENARY KEYNOTE SESSION



15:45 Chairperson's Remarks

Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC



15:50 The Making of Multispecific Antibodies—A Clinical Perspective

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

- How has the field of multispecific antibodies evolved in recent years?
- What are the modes of action utilised by multispecific antibodies?
- What are the frequently used targets and target combinations?
- What are the emerging applications?



16:00 The Future of T Cell Engagers

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

- TCE approvals are catching up with ADC approvals
- Compelling single-agent activity in blood-borne and solid tumor indications
- Diverse formats and targets work for TCEs
- Several ways to augment the efficacy and safety of TCEs: hundred percent response rates at reach

17TH ANNUAL | LISBON, PORTUGAL

ADVANCING MULTISPECIFIC ANTIBODIES AND COMBINATION THERAPY TO THE CLINIC

Novel and Synergistic Combinations

- Treatment of minimal residual disease and target combinations
- Recent highlights pointing at the future of TCEs

16:10 FIRESIDE CHAT: Emerging Modalities and the Future of Antibody Engineering






Moderator: Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

- Bispecific antibodies and T cell engagers
- Design principles
- Complex formats: Trispecifics and costimulation
- Bispecifics compared to ADCs or CAR-T
- Next frontiers beyond cancer

Panelists:

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

Ulrike Philippar, PhD, Vice President Oncology, Global Head of Discovery, Johnson & Johnson Innovative Medicine

16:50 Refreshment Break in the Exhibit Hall with Poster Viewing

YOUNG SCIENTIST MEET-UP

IN-PERSON ONLY: Young Scientist Meet Up

Raphaelle Drean, PhD, Project Manager, Scientist, R&D, Affilogic

Iris Goldman, Conference Producer, Cambridge Innovation Institute

Leire Oyon, Research Scientist, Protein Crystallography Unit, Navarrabiomed

Isabel Waibel, Graduate Student, Biochemical Engineering, ETH Zurich

The young scientist meet-up is an opportunity for scientists entering the field to develop connections across institutions, and for established leaders to come build relationships with the next generation of scientists. The meet-up will pave the way for mentorships, professional opportunities, and scientific discovery.

- Get to know fellow peers and colleagues
- Make connections and network with other institutions
- Inspire others and be inspired!

17:30 From Bi- to Trispecific Antibodies: Reimagining the Next Generation of ADCs

Belinda Wenke, PhD, Director & Principal, WB Consulting

Multispecific antibodies open new avenues of exploration within the ADC field. By targeting multiple tumor antigens, one common route of tumor escape through antigen loss can be avoided. Multispecifics also allow targeting of tumor matrix components alongside tumor antigens to assist in addressing tumors where the ECM prevents access to the tumor. Furthermore, biparatopics as well as conditional binding and internalization strategies can be utilized to enhance safety and efficacy.

DRIVING NOVEL BIOLOGY

18:00 Chairperson's Remarks

Tariq Ghayur, PhD, Tariq Ghayur Consulting, LLC; Entrepreneur in Residence, FairJourney Biologics

18:01 T Cell Stimulating Vaccines Empower CD3 Bispecific Antibody Therapy in Solid Tumours

Vitalijs Ovcinnikovs, PhD, Principal Scientist, Genmab

Pre-treatment vaccination in immunologically "cold" tumour models increases T-cell influx and promotes tumour nest infiltration following CD3 engager treatment. Even when composed of tumour-unrelated antigens, this combination therapy establishes a broadly-inflamed TME, drives T cell-mediated macrophage polarisation, and achieves effective tumour eradication. While the vaccine antigen is irrelevant for primary response, induction of immune memory depends on the tumour's inherent immunogenicity, with "cold" tumours requiring the presence of tumour-specific antigens.

18:30 UnigenX: An AI-Powered Discovery Platform for Novel Tumour-Associated Antigens for Targeted Immune Activation

Roy Granit, PhD, Senior Director, Head of Computational Discovery, Compugen

Selecting the right tumour-associated antigens (TAAs) is key for T cell engagers and targeted immune activation. UnigenX expands Compugen's validated AI-powered discovery engine into TAA discovery, integrating rich multiomics datasets to identify candidate TAA targets and provide multidimensional

ADVANCING MULTISPECIFIC ANTIBODIES AND COMBINATION THERAPY TO THE CLINIC

Novel and Synergistic Combinations

scoring. Based on biological interpretation the targets are then prioritised for extensive experimental validation. This enables expanding opportunities for single- or dual- target combinations for targeted modalities across cancer indications.

T CELL ENGAGERS FOR AUTOIMMUNE DISEASE

19:00 T Cell Engagers: Expanding Horizons in Oncology and Beyond

Gulsah Albayrak, PhD, Research Scientist, Department of Oncology, University of Oxford

T cell engagers have moved from proof-of-concept to a defining modality in oncology, yet their promise in solid tumours remains limited by cytokine-driven toxicity, T cell exhaustion, and TME hurdles. This talk maps the expanding landscape of bispecific and trispecific engagers, the opportunities shaping the next generation of programmes, and emerging applications beyond cancer in autoimmunity and chronic infection, drawing on our own work in solid cancers.

19:00 Close of Advancing Multispecifics to the Clinic Conference

17TH ANNUAL | LISBON, PORTUGAL

ENGINEERING THE NEXT GENERATION OF BISPECIFIC ANTIBODIES

Introducing Novel Functionality and Constructs

THURSDAY 19 NOVEMBER

8:00 Registration and Morning Coffee

NEXT-GENERATION BI- AND MULTI-SPECIFICS

8:25 Chairperson's Remarks

Nicolas Fischer, PhD, CEO, Light Chain Bioscience

8:30 Evolve: A Trispecific T Cell Engager with Integrated CD2 Costimulation for the Treatment of Solid and Hematologic Tumours

Jeremy S. Myers, PhD, Senior Vice President, R&D, EvolveImmune Therapeutics Inc.

Therapeutic design considerations for integrating TCR and CD2 costimulatory receptor activation, alternative costimulatory pathway opportunities, and employing single versus multiple-tumour antigen targeting strategies.

9:00 Novel Combinatorial Approach to Generate a Huge Collection of Bi- and Oligospecific Nb-Fusion Proteins

Isabell Lang, PhD, Group Leader, Internal Medicine II, University Hospital Wuerzburg

We introduce an innovative approach that allows the creation of a huge library of bi- and multispecific nanobody-based TNF receptor targeting biologicals. This type of biological library does not need chain pairing mutations and is obtained by coexpression of genetically engineered constant antibody domains fused with nanobodies. Such fusion proteins proved to be highly homogenous with respect to productivity and stability and are thus of particular translational interest.

9:15 Lessons in the Development of Multispecific Antibodies as Immune Engagers

Etienne Matous, PhD, Senior Principal and Scientist Head, Lead Optimisation, Ichnos Glenmark Innovation IGI

Multiple projects in developing multispecific antibodies have been performed with the aim to develop either innate or T cell immune engagers to treat haematological or solid cancers. Projects were either highly successful resulting in meaningful clinical outcomes or failed. Case studies will be presented from our rich in house database to understand the complex parameters required for successful multispecific development including molecule architecture, synapse distance, structure-function relationship and developability

9:30 High-Throughput Platform for Accelerated Bispecific Antibody Discovery GENEWIZ

Crystal Richardson, Senior Business Partnership Manager, Gene Synthesis, Azenta Life Sciences

The rapid evolution of antibody discovery, driven by advances in automation and machine learning has created new opportunities to accelerate the identification of high-quality therapeutic candidates. Here, we present an integrated high-throughput platform that combines gene synthesis, antibody production, automated screening workflows, and AI-driven codon optimisation to streamline bispecific antibody discovery. By addressing key bottlenecks in both candidate identification and protein expression, this integrated platform enables faster, more efficient generation of high-quality antibody therapeutics.

9:45 Sponsored Presentation *(Opportunity Available)*

10:00 Coffee Break in the Exhibit Hall with Poster Viewing

APPLICATIONS OUTSIDE ONCOLOGY

10:44 Chairperson's Remarks

Nicolas Fischer, PhD, CEO, Light Chain Bioscience

10:45 Bispecific Antibody Shuttles for Cell-Type-Specific CNS Delivery of Proteins and Nucleic Acids

Peter M. Tessier, PhD, Albert M. Mattocks Professor, Pharmaceutical Sciences & Chemical Engineering, University of Michigan

Bispecific antibodies that engage blood–brain barrier receptors enable systemic delivery of biologics to the CNS, yet limited cell-type specificity constrains efficacy and safety. We are engineering shuttles that couple BBB transport with targeting to neurons, microglia and other brain cell types. We will discuss design principles, PK/PD relationships, and efficacy results to date across different neurological disease models.

11:15 Next-Generation FVIIIa-Mimetic Bispecific Antibody NXT007 for Hemophilia A: Evaluation in Preclinical Models

Matthew Locke, PhD, Principal Scientist, Non-Malignant Hematology, Roche

NXT007 is a next-generation FVIIIa-mimetic bispecific antibody designed to achieve hemostatic normalisation in people with hemophilia A. This presentation details a preclinical comparison between NXT007 and emicizumab across multiple *in vitro* and *in vivo* models. Results show NXT007 provides significantly greater potency in thrombin generation, clotting, and bleeding assays, with no evidence of hypercoagulability. These findings support the clinical development of NXT007 and its potential to improve therapeutic efficacy.

ENGINEERING THE NEXT GENERATION OF BISPECIFIC ANTIBODIES

Introducing Novel Functionality and Constructs

11:45 Dual Targeting of Transferrin Receptor and CD98hc Enhances Brain Exposure of Large Molecules

Padma Akkapeddi, PhD, Senior Scientist, Antibody Discovery & Protein Engineering, Denali Therapeutics, Inc.

Targeting blood–brain barrier proteins such as TfR and CD98hc enables more effective brain delivery of biotherapeutics for neurological diseases. We engineered a human IgG1 Fc domain to bind both receptors, creating a dual transport vehicle (TV) platform that achieves higher brain concentrations than targeting either receptor alone.

12:15 Attend Concurrent Session

12:45 Luncheon in the Exhibit Hall with Last Chance for Poster Viewing

NOVEL APPROACHES IN ONCOLOGY

14:00 Chairperson's Remarks

Harald Kolmar, PhD, Professor and Head, Institute for Organic Chemistry and Biochemistry, Technische Universität Darmstadt



14:05 KEYNOTE PRESENTATION: Tumour-Selective CD47 Targeting for the Treatment of Platinum-Resistant Ovarian Cancer

Nicolas Fischer, PhD, CEO, Light Chain Bioscience

Blocking CD47 is an attractive therapeutic approach in oncology that has faced setbacks due to ubiquitous expression of this innate immune checkpoint. We have developed a bispecific approach, relying on unbalanced affinity arms to interfere with the SIRPa-CD47 "don't eat me" signal in a tumour antigen dependent way. This approach has now achieved clinical proof-of-concept in heavily pretreated, platinum-resistant ovarian cancer patients.

14:35 Comparative Analysis of 4-1BB and CD28 Tumour-Targeted Co-Stimulation to Support T Cell Bispecific Antibody Therapy in Solid Tumours

Teemu T. Junttila, PhD, Principal Scientist, Translational Oncology, Genentech

The clinical activity of T cell bispecific antibodies (TCBs) in solid tumours remains limited. Insufficient co-stimulatory signals are suspected to be a major factor contributing to the suboptimal efficacy. We systematically compared 4-1BB and CD28 co-stimulation in the context of the HER2xCD3 TCB (runimotamab), using HER2-4-1BBL and HER2-CD28 tumor-targeted co-stimulatory agonists.

15:05 Leveraging Single-Cell Technologies to Engineer the Immune System

Ido Amit, PhD, Principal Investigator, Director, Weizmann Immunotherapy Center, Weizmann Institute of Science

Immunotherapy-engineering the immune system to treat diseases such as cancer, neurodegeneration, and autoimmune disorders has been explored for over a century but is only now transforming medicine. Recent years have brought major clinical successes, driven by advances in genomics, synthetic biology, and machine learning. Single-cell genomics is further revolutionising our understanding of immune-related diseases. I will highlight these insights and discuss emerging technologies shaping the future of immunology and immunotherapy.

INTERACTIVE DISCUSSIONS

15:35 Find your Table and Meet your Moderator

Interactive Breakout Discussions are informal, moderated discussions, allowing participants to exchange ideas and experiences and develop future collaborations around a focused topic. Each discussion will be led by a facilitator who keeps the discussion on track and the group engaged. To get the most out of this format, please come prepared to share examples from your work, be a part of a collective, problem-solving session, and participate in active idea sharing. Please visit the Interactive Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

TABLE 5: *in vivo* mRNA-Encoded T Cell Engagers

Wei Xu, PhD, CSO, METiS TechBio

- What are the key advantages of *in vivo* mRNA-encoded TCEs versus recombinant protein TCEs?
- How might transient mRNA-driven expression alter CRS, ICANS, and on-target/off-tumor toxicity risks?
- What are the major barriers to successful *in vivo* TCE development: LNP delivery, biodistribution, expression control, immunogenicity, or manufacturability?
- Five years from now, will *in vivo* mRNA-encoded TCEs complement conventional bispecific antibodies—or fundamentally redefine how T-cell engagers are developed and delivered?

16:15 *In vivo* mRNA-Encoded T Cell Engagers

Wei Xu, PhD, CSO, METiS TechBio

T cell engagers (TCEs) are limited by suboptimal pharmacokinetics and safety. We present an mRNA-LNP platform enabling *in vivo* expression of bispecific and trispecific TCEs with tunable exposure and tissue-directed activity. Through sequence and formulation engineering, this approach achieves potent efficacy with improved safety and reduced cytokine release compared to recombinant formats. Preclinical data highlight its potential to expand the therapeutic window in oncology and beyond.

ENGINEERING THE NEXT GENERATION OF BISPECIFIC ANTIBODIES

Introducing Novel Functionality and Constructs

16:45 Precision-Activated T Cell Engagers in Immuno-Oncology: Pharmacological Characterisation of Albumin-Masked TCR Multispecific VHHs

Christelle Nonne, PhD, Senior Principal Scientist, LMR, Sanofi Group

The precision activated bispecific VHHs comprise albumin-binding and T cell receptor-binding VHH domains connected via protease-cleavable linkers, remaining masked in healthy tissues but selectively activated in tumours where disease-associated proteases restore T cell engaging activity. Preclinical data demonstrate >1000-fold increases in T cell activation and cytotoxicity upon protease cleavage, with significant tumor growth inhibition and improved safety profiles compared to conventional T cell engagers.

17:15 Close of Summit

INAUGURAL | LISBON, PORTUGAL

T CELL ENGAGERS

Building Safer, Smarter TCEs for Broader Therapeutic Impact

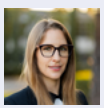
TUESDAY 17 NOVEMBER

7:30 Registration and Morning Coffee

CONDITIONALLY ACTIVATED AND LOGIC-GATED TCEs FOR SAFER SOLID-TUMOUR TARGETING

8:25 Chairperson's Remarks

Alan J. Korman, PhD, CSO, Bluesphere Bio



8:30 KEYNOTE PRESENTATION: Enhancing Safety to Unlock Efficacy: A Novel Class of Conditionally Activated TCEs for Solid Tumours

Aude Segaliny, PhD, Vice President, Research & Development, Amberstone Biosciences

T-MATE addresses the efficacy–safety limitations of solid-tumour T cell engagers through an innovative safety-gating MOA. This pH-gated, target-selective approach adapts to tumour pH heterogeneity, maintaining full potency within the microenvironment while ensuring minimised activity at physiological pH. By decoupling safety from efficacy, the platform prevents systemic toxicity and unlocks efficacy through improved safety. We present data demonstrating how this conditional strategy provides a dramatically expanded therapeutic index.

9:00 A Conditionally Active, Dual-Targeting BiTAC-TCE with Superior Tumour Selectivity for the Treatment of Solid Tumours

Steffen Dickopf, PhD, Senior Director, Immuno-Oncology, VERAXA Biotech GmbH

BiTAC-TCE employs dual-targeting and on-cell assembly of a split CD3 binder, enabling selective activation on dual antigen–positive tumour cells. Targeting EpCAM and a distinct antigen drives tumour-selective activity, demonstrating discrimination between tumour and healthy surrogate cells in 2D- and 3D-cell cultures and strong *in vivo* efficacy. A transgenic mouse model revealed no signs of toxicity, indicating a broader therapeutic index with the potential to overcome on-target, off-tumour toxicities.

9:30 POSTER HIGHLIGHT: Conditionally Active T-cell Engagers for Tumor Therapy

Ann-Kathrin Loeffler, PhD, Scientific Staff Member, Cell Biology & Immunology, Univ of Stuttgart

We developed a novel conditionally active EGFR×CD3 T-cell engager using an elg-based architecture. A tumor-associated protease-cleavable linker connects the outer Fab to the inner CD3-binding site, sterically masking CD3 binding and enabling controlled unmasking. Three variants representing open, blocked, and protease-activatable states were generated and characterized. Functionality was demonstrated in 2D and 3D breast cancer models under static and flow conditions, highlighting the platform's potential for spatially controlled T-cell activation.

10:00 BRGSF-HIS: A Humanized Platform for Efficacy and Safety Evaluation of T Cell Engagers

Kader Thiam, Sr VP Discovery, Preclinical Models & Svcs, genOway

- Outlining genO-BRGSF-HIS mice: a CD34+-reconstituted model with functional human lymphoid and myeloid compartments, without side effects
- Evidencing the recruitment of human immune cells to tumor microenvironment, as well as their activation status
- Highlighting the key role of myeloid compartment in the translatable assessment of biologic's safety in humanized models

10:30 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing

11:15 Logic-Gated T Cell Engagers for Precision Cancer Therapy

Florian Maerkl, PhD, Head of Discovery, R&D, Plectonic Logibody GmbH

Conventional T cell engagers are constrained by on-target, off-tumour toxicity due to limited tumour-specific antigens. Plectonic's logic-gated, multispecific T cell engagers (Logibodies) integrate dual-antigen recognition to achieve conditional T cell activation. This architecture drives potent and durable tumour cell killing *in vitro* and *in vivo* while minimising off-tumour toxicity. Plectonic advances a proprietary Logibody pipeline and welcomes collaborations to co-develop safe and effective, next-generation T cell therapies.

11:45 PRO-XTEN Masked T Cell Engagers: A Novel Therapeutic Approach Enabling Protease-Specific Activation of TCEs Only in the Tumour Microenvironment to Mitigate Damage to Healthy Tissues and Reduce Toxicity

Volker Schellenberger, PhD, Senior Vice President, Research Oncology, Vir Biotechnology, Inc.

Vir Biotechnology's PRO-XTEN dual-masked T cell engagers (TCEs) are designed to remain inactive until they reach the tumour microenvironment. Once the masked TCE reaches the tumour microenvironment, the heightened protease activity releases the masks, unleashing the potent TCE core. This masking technology simultaneously provides extended half-life in circulation, masking of TCE activity, and improved manufacturability. PRO-XTEN dual-masked TCEs are currently being evaluated across three different tumour-associated antigens in clinical trials.

12:15 Attend Concurrent Sessions

12:45 Luncheon in the Exhibit Hall with Poster Viewing

INAUGURAL | LISBON, PORTUGAL

T CELL ENGAGERS

Building Safer, Smarter TCEs for Broader Therapeutic Impact

CO-STIMULATORY TCEs FOR T CELL ACTIVATION AND REDUCING EXHAUSTION

14:00 Chairperson's Remarks

Marcela Guzman Ayala, PhD, Head, In Vitro Pharmacology, Molecular Partners

Volker Schellenberger, PhD, Senior Vice President, Research Oncology, Vir Biotechnology, Inc.

14:05 TriTCE Co-Stim: A Differentiated T Cell Engager Platform with Conditional Cis CD28 Co-Stimulation and Transferability to Diverse Targeting Strategies

Nina E. Weisser, PhD, Director, Multispecific Antibody Therapeutics, Zymeworks, Inc.

We have designed a costimulatory multispecific platform with conditional cis CD28 co-stimulation to widen the therapeutic window through optimised T cell engagement and enhanced T cell functionality. The design and application of this platform across diverse tumour-targeting strategies, including logic-gated, 2+1+1, and peptide–MHC (pMHC)-targeting approaches, will be discussed. We will highlight the benefits of integrated co-stimulation, including enhanced and sustained T cell functionality and antitumour activity compared with conventional TCEs.

14:35 MP0632, an AND-Gated Switch-DARPin T Cell Engager with CD2 Costimulation for Ovarian Cancer

Marcela Guzman Ayala, PhD, Head, In Vitro Pharmacology, Molecular Partners

Ovarian cancer remains a leading cause of cancer mortality due to late diagnosis, frequent relapse, and limited benefit from immunotherapies driven by the lack of tumour-specific antigens. Using Molecular Partners' Switch-DARPin platform, we developed MP0632, a logic-gated CD3 T cell engager with CD2 co-stimulation, designed for ovarian cancer and extendable to additional solid tumours. It enables potent tumour-localised activation upon simultaneous recognition of mesothelin and EpCAM, while minimising off-tumour toxicity.

15:05 TCAB: Tackling the Challenges of Solid Tumour-Targeting T Cell Bispecifics

Mireille Vankemmelbeke, PhD, Principal Scientist, Scancell, Ltd.

The full potential of solid tumour targeting T cell bispecifics (TCB) is hampered by limited tumour penetration and T cell exhaustion. Co-dosing T cell bispecific (TCB) with an excess of a fully Fc-functional competing antibody (AB) solves these challenges through improving tumour penetration, synergistic tumour cell killing, and blocking off-tumour T cell activation. TCAB demonstrates superior functionality across a range of targets, including 134TCAB targeting Fucosyl-GM1 in SCLC.

15:35 Maximising the Power of Bispecific Therapies for Treating Solid Tumours

Tatjana Petojevic, PhD, Director, Protein Sciences, Rondo Therapeutics

Engagement of costimulatory receptors is an emerging frontier in solid tumour treatments with the promise to promote sustained T cell activity and tumor cell killing. We will highlight our CD28 platform design and the development of RNDO-564, a precisely tuned CD28 × Nectin-4 bispecific antibody with an optimised therapeutic window for the treatment of advanced bladder cancer. An update of the clinical development of RNDO-564 will be provided.

16:05 Refreshment Break in the Exhibit Hall with Poster Viewing

ENGINEERING STRATEGIES FOR ANTI-TUMOUR ACTIVITY AND WIDENING THE THERAPEUTIC WINDOW

16:50 MAIT Engagers Afford a Large Therapeutic Window for the Treatment of Solid Tumors

Simon Plyte, PhD, CSO, R&D, Biomunex Pharmaceuticals

MAIT engagers, bispecific antibodies ligating the MAIT T-cell subset and cancer cells, induce efficient killing of solid tumors and have superior safety compared to CD3 engagers. Unlike CD3 engagers that activate all T-cells, MAIT engagers only engager the abundant MAIT cell population and do not induce cytokine release syndrome nor increase immunosuppression in the tumor microenvironment via activation of the regulatory T-cells. Consequently, MAIT engagers provide a large therapeutic window.

17:20 Turning Cold Tumours Hot: Dual-Modality Strategies to Boost T Cell Engagers in Solid Tumours

Abdullah Elsayed, PhD, Group Leader, Bispecific Antibody Research, Philochem AG

L19-mTNF is a tumour-targeting TNF fusion protein directed against the extra-domain B of fibronectin that promotes vascular activation and immune infiltration. We evaluated its combination with a CEAxCD3 TCE to overcome the immune-excluded microenvironment of solid tumours. The combination enhanced T cell infiltration, TCE extravasation, and anti-tumour activity in colorectal cancer models, leading to durable complete responses and immune memory, supporting a dual-modality strategy to turn cold tumours hot.

17:50 Engineering Affinity Attenuated and Effector CD8 Biased T Cell Engagers

Tilbe Creigh-Pulatmen, PhD, Assoc Dir, Protein Engineering & Novel Modalities - Oncology ICC, AstraZeneca

T cell engagers (TCEs) have shown promising clinical efficacy, but are still associated with significant toxicities, such as cytokine release syndrome (CRS). To address this, we have developed novel affinity attenuated and CD8-biased TCEs. Case studies will be presented on the discovery and engineering of

T CELL ENGAGERS

Building Safer, Smarter TCEs for Broader Therapeutic Impact

clinical lead candidates for CD20 focusing the presentation on how the binders were generated and the TCEs applications in oncology and immunology.

18:20 LGTX-101: A Novel Machine-Learning-Derived, Selectivity-Enhanced Nectin-4 x CD3 Bispecific T Cell Engager Mitigates On-Target and Off-Tumour Toxicity Associated with Nectin-4 Targeting

Angus M. Sinclair, PhD, CSO, R&D, LabGenius Therapeutics

LGTX-101 is a next-generation, ML-derived, selectivity-enhanced Nectin-4 x CD3 TCE identified via EVA platform, which screened >270,000 designs. Its novel 3+1 architecture drives targeted T cell cytotoxicity with >78,000-fold selectivity for tumours over healthy cells. In humanised BT-474 xenograft models, LGTX-101 shows robust efficacy, supporting a promising therapeutic window for Nectin-4–expressing cancers. LGTX-101 is in IND-enabling studies with a clinical trial anticipated to commence in H1 2027.

18:50 Welcome Reception in the Exhibit Hall with Poster Viewing

19:50 Close of T Cell Engagers Conference

2ND ANNUAL | LISBON, PORTUGAL

ADVANCES IN IMMUNOENGINEERING

From *ex vivo* to *in vivo*: Engineering the Next Era of Cell Therapies

WEDNESDAY 18 NOVEMBER

7:30 Registration and Morning Coffee

IN VIVO PROGRAMMING, DELIVERY AND CONTROL OF ENGINEERED CELL THERAPIES

8:25 Chairperson's Remarks

Cecile Bauche, PhD, CSO and Co-Founder, Alaya.bio

8:30 *In vivo* Control of CAR-Ts with Drug-Responsive Protein Switches Engineered by Directed Evolution

Michael Traxlmayr, PhD, Group Leader, BOKU University

CAR-T cells are living drugs capable of long-term proliferation and persistence in patients. However, once administered, they act autonomously, limiting clinicians' ability to modulate activity and increasing risks such as cytokine release syndrome, ICANS, and on-target, off-tumour toxicities without precise, real-time control. To address this, we engineered drug-responsive protein switch systems and demonstrated that they enable reversible functional control of CAR-T cells *in vivo* via oral drug administration.

9:00 Engineering Armoured *in vivo* CAR-T Cells through Targeted Delivery and Transient mRNA Gating

Shimobi Onuoha, PhD, CTO, Chimeris UK Ltd.

In vivo generation of CAR-T cells offers a scalable alternative to *ex vivo* therapy but remains limited by delivery efficiency, toxicity, and durability. We describe an *in vivo* CAR-T platform using CD8-targeted LNPs to transiently deliver T cell-restricted CAR and modular effector mRNAs. This enables selective CAR expression, tunable local immune amplification, enhanced antigen-dependent cytotoxicity, and robust functional activity, establishing a programmable framework for immune-cell engineering.

9:30 A Novel Polymeric Gene Delivery Platform to Precisely Target and Reprogram Cells *in vivo* for Hematological Malignancies and Beyond

Cecile Bauche, PhD, CSO and Co-Founder, Alaya.bio

Alaya.bio has developed a proprietary lentivector platform using biodegradable polymers and lipids to improve targeting and specificity, and to reduce immunogenicity. In NSG mice with human leukaemia cells, a single intravenous injection controlled tumour burden and extended survival beyond 28 days without acute toxicity. CAR-T cells were detected in treated animals. The platform shows strong potential for *in situ* universal CAR-T therapies and broader applications, including genetic disorder treatments.

10:00 Closing the "Build" Gap in AI-Driven Antibody Discovery

TelesisBio

David Weiss, Sr. Dir Marketing & Product, Marketing, Telesis Bio

AI can generate antibody candidates faster than teams can build and test them. Outsourced DNA synthesis can delay feedback for days or weeks. This talk presents an on-premises workflow linking AI-enabled design, modular enzymatic DNA synthesis, and automated assembly to produce expression-ready DNA. Anonymized examples highlight a 36-hour sequence-to-answer cycle and throughputs of 2000 genes per day. We'll discuss how automation and sequence reuse support faster design-build-test-learn cycles.

10:30 Coffee Break in the Exhibit Hall with Poster Viewing

11:15 Increasing the Safety of Non-Viral Gene Transfer by Sleeping-Beauty Modification

Tamas Rasko, PhD, Senior Scientist, University Hospital Würzburg

SleepingBeauty100X represents a cost-effective alternative to lentiviral vectors when generating CAR-T. Current regulation requires the absence of transposase within infused CAR-T products. However, protein-stability displays a concern for fast-manufacturing or *in vivo* approaches, harbouring a theoretical risk of re-transposition which may cause genetic instability, or modification of non-T cells after infusion. Thus, we developed a modified SB-Transposase with a reduced half life.

11:45 POSTER HIGHLIGHT: An Orthogonal cis-targeting Platform for Delivery of Attenuated Cytokines to Chimeric Antigen Receptor T Cells

Julia Fossati, Principal Research Assoc, Oncology, Roche Glycart

Despite proven successes in hematological malignancies, CAR-T cell therapy faces challenges in solid tumors. We introduce a P329G (PG) cis-targeting platform that uses a non-signaling PG-tag to deliver attenuated cytokines specifically to engineered cells. Our results demonstrate that this modular approach selectively expands CAR-T cells, improves killing capacity, and enhances *in vivo* efficacy, offering a strategy to improve the therapeutic index of CAR-T cell therapies.

12:15 Attend Concurrent Sessions

12:45 Luncheon in the Exhibit Hall with Poster Viewing

ENGINEERING NEXT-GENERATION CAR-T CELLS

14:00 Chairperson's Remarks

Michael B. Battles, PhD, Principal Scientist, Adimab, LLC

2ND ANNUAL | LISBON, PORTUGAL

ADVANCES IN IMMUNOENGINEERING

From *ex vivo* to *in vivo*: Engineering the Next Era of Cell Therapies



14:05 KEYNOTE PRESENTATION: Engineering More Effective CAR-T Cells by Co-Opting T Cell Signaling Networks

Robbie G. Majzner, MD, Director, Pediatric and Young Adult Cancer Cell Therapy Program, Dana Farber Cancer Institute

This talk will explore how to utilize insights from CAR-T cell signaling biology to engineer more effective immunotherapies.

14:35 Novel Orthogonal Receptor Platform Activating the IL12 Pathway in CAR-T Cells Using a Small-Molecule Ligand

Dominic Schwarz, Scientist, LMU and Roche

Orthogonal split-antibody-based Interleukin-12 receptors exhibit high affinity for the inert small-molecule chelator DOTAM. DOTAM-inducible Interleukin-12 receptors (D12Rs) result in attenuated agonism which is potentiated during concurrent CAR signaling. CAR D12R T cells showed enhanced cytotoxicity under repeated antigen exposure and mediated durable *in vivo* efficacy in human xenograft models. This effect is mediated by increased tumour-infiltration of a rapidly proliferating progenitor-rich T cell subset.

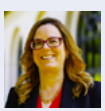
15:05 Toward *in vivo* Engineering of the Immune System

Adrian Bot, MD, PhD, Former CSO, Executive Vice President, R&D, Capstan Therapeutics

In vivo generation of Chimeric Antigen Receptor (CAR)—expressing immune cells represents a novel development in the field of immunotherapy. Preclinical and early clinical data supports the efficacy and safety of viral and RNA-based *in vivo* CAR engineering technologies, heralding a novel era. This progress opens a new avenue towards multi-modal engineering of the immune system, to address medical needs intractable with alternate treatment modalities.

15:35 Transition to Keynote session

PLENARY KEYNOTE SESSION



15:45 Chairperson's Remarks

Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC



15:50 The Making of Multispecific Antibodies—A Clinical Perspective

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

- How has the field of multispecific antibodies evolved in recent years?
- What are the modes of action utilised by multispecific antibodies?
- What are the frequently used targets and target combinations?
- What are the emerging applications?

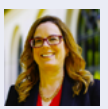


16:00 The Future of T Cell Engagers

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

- TCE approvals are catching up with ADC approvals
- Compelling single-agent activity in blood-borne and solid tumor indications
- Diverse formats and targets work for TCEs
- Several ways to augment the efficacy and safety of TCEs: hundred percent response rates at reach
- Treatment of minimal residual disease and target combinations
- Recent highlights pointing at the future of TCEs

16:10 FIRESIDE CHAT: Emerging Modalities and the Future of Antibody Engineering






2ND ANNUAL | LISBON, PORTUGAL

ADVANCES IN IMMUNOENGINEERING

From *ex vivo* to *in vivo*: Engineering the Next Era of Cell Therapies

Moderator: Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

- Bispecific antibodies and T cell engagers
- Design principles
- Complex formats: Trispecifics and costimulation
- Bispecifics compared to ADCs or CAR-T
- Next frontiers beyond cancer

Panelists:

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

Ulrike Philippar, PhD, Vice President Oncology, Global Head of Discovery, Johnson & Johnson Innovative Medicine

16:50 Refreshment Break in the Exhibit Hall with Poster Viewing

YOUNG SCIENTIST MEET-UP

IN-PERSON ONLY: Young Scientist Meet Up

Raphaelle Drean, PhD, Project Manager, Scientist, R&D, Affilogic

Iris Goldman, Conference Producer, Cambridge Innovation Institute

Leire Oyon, Research Scientist, Protein Crystallography Unit, Navarrabiomed

Isabel Waibel, Graduate Student, Biochemical Engineering, ETH Zurich

The young scientist meet-up is an opportunity for scientists entering the field to develop connections across institutions, and for established leaders to come build relationships with the next generation of scientists. The meet-up will pave the way for mentorships, professional opportunities, and scientific discovery.

- Get to know fellow peers and colleagues
- Make connections and network with other institutions
- Inspire others and be inspired!

ENGINEERING T CELL THERAPIES AND IMMUNE CELL ENGAGERS

17:25 Chairperson's Remarks

Michael Traxlmayr, PhD, Group Leader, BOKU University

17:30 TCR Constant Region-Targeting VHH Bispecifics: An NHP Cross-Reactive Alternative to CD3 T Cell Engagers

Michael B. Battles, PhD, Principal Scientist, Adimab, LLC

All approved T cell engagers engage the TCR complex through CD3ε, but this is not the only therapeutically exploitable site. We developed VHH bispecifics targeting novel quaternary epitope at the TCRα/β constant region interface, providing pan-αβ T cell redirection with full TRBC1/TRBC2 allele coverage and inherent human/cynomolgus cross-reactivity. These anti-TCR bispecifics achieve picomolar potency despite moderate monovalent affinities, raising testable questions about how TCR complex geometry influences T cell activation.

18:00 Reshaping Adoptive T Cell Therapies with T Memory Cell–Based Strategies, Control of Graft-Versus-Host Disease (GVHD), and Modulation of the Tumour Microenvironment (TME)

Thomas Boeldicke, PhD, Project Leader, Structure & Function of Proteins, Helmholtz Center for Infection Research

Targeting neoantigens in solid tumours with adoptive T cell therapies is of great clinical interest. However, different limitations often lead to insufficient T cell therapy. This perspective highlights three interdependent pillars that together define the next generation of adoptive immune therapies: T memory cell–based strategies, control of graft-versus-host disease (GVHD), and modulation of the tumour microenvironment (TME). These three interlocking strategies form a coherent conceptual framework for future immunotherapy development.

18:30 ML Guided Design of Multispecific T Cell Engagers

Edward King, Group Leader, Research, Coding Bio

This talk will showcase how Coding Bio integrates high throughput functional immune screening with machine learning to design next-generation, modular T cell engagers (TCEs). By training models on immune activation rather than binding affinity, we're redefining how efficacy and safety are optimised *in silico*. I'll discuss our lead trispecific program now advancing toward Phase 1.

19:00 Close of Advances in Immunoengineering Conference

4TH ANNUAL | LISBON, PORTUGAL

NEXT-GENERATION IMMUNOTHERAPIES

From TCRs to Cytokines: Redefining Clinical Immunotherapy

THURSDAY 19 NOVEMBER

8:00 Registration and Morning Coffee

TCR-T CELL THERAPY APPROACHES

8:25 Chairperson's Remarks

Björn L. Frendeus, PhD, CSO, BioInvent International AB



8:30 KEYNOTE PRESENTATION: Targeting PRAME+ Cancers: Clinical Progress across TCR T Cell Therapy and Bispecific Approaches

Cedrik M. Britten, CMO, Immatics Biotechnologies GmbH

PRAME is a tumour-associated antigen expressed in greater than 50 cancers, supporting its relevance as a broadly applicable immunotherapy target. This presentation highlights clinical progress in targeting PRAME+ tumours using the TCR T-cell therapies anzutresgene autoleucel (anzu-cel, IMA203) and IMA203CD8, as well as the bispecific T cell engager IMA402. Collectively, clinical data from these programs demonstrate the potential of PRAME-directed strategies to help address persistent unmet needs in solid tumours.

9:00 Engineering Novel TCR-Mimic Antibody-Based T Cell Engagers to Target the Intracellular Proteome for the Treatment of Solid Tumours

Dongxing Zha, PhD, CEO, Ypsilon Therapeutics

While traditional antibodies are limited to cell-surface antigens, our next-generation TCR-mimic (TCRm) antibody platform enables targeting of the vast intracellular proteome, allowing us to address tumour-specific targets such as cancer-testis antigens. This presentation will detail engineering strategies to build next-generation TCRm T cell engagers, designed to achieve a greater therapeutic window in targeting HLA-peptide complexes, and share recent data on how to overcome challenges in treatment of solid tumours.

9:30 Redefining Antigen Design: Advanced Engineering for Next-Generation Antibody Discovery Against Complex Therapeutic Targets

KACTUS

Anil Kumar, Bus Dev Mgr, KACTUS

Discover how advanced antigen engineering enables antibody discovery against complex and emerging therapeutic targets. KACTUS leverages VLP and Nanodisc technologies to preserve native membrane protein structures, supporting immunisation, screening and characterisation. This presentation explores applications in T-cell engagers, multispecific antibodies and challenging targets, including MRGPRX2, CDCP1 and KLK family proteases, across immunology and oncology.

10:00 Coffee Break in the Exhibit Hall with Poster Viewing

ADVANCES IN CHECKPOINT INHIBITORS

10:45 Immune Checkpoint Inhibitor Therapies: Building on the Revolution to Improve Patient Outcomes

Hardev S. Pandha, Honorary Professor, Urological Oncology, University of Surrey

Immune checkpoint inhibitors have revolutionised cancer treatment for almost every type of malignancy. Despite this success story a high proportion of patients still fail to respond to single agent checkpoint inhibitors, and many responders fail to achieve durable responses. This talk will examine how next-generation strategies are building on this foundation to expand and improve outcomes across a broader range of cancers.

11:15 Phase Ib/II Study of Neoadjuvant Cemiplimab Plus Imiquimod and Laser Therapy in High-Risk Resectable Basal Cell Carcinoma

Maria Gonzalez Cao, PhD, Chair, Melanoma Medical Oncology Unit, Oncology Institute Dr. Rosell, Dexeus University Hospital

Basal cell carcinoma (BCC) is the most common human malignancy; uncommon high-risk cases may require morbid surgery. Neoadjuvant approaches may improve outcomes, but data are scarce. Cemiplimab is active in advanced BCC, while imiquimod and fractional CO2 laser enhance local immunity. CEMIQUID is a phase Ib/II trial evaluating neoadjuvant cemiplimab ± imiquimod/laser in resectable high-risk BCC. The primary endpoint is 3-year relapse-free survival; recruitment is ongoing in Spain.

11:45 B Cells and Antibodies in Melanoma: Emerging Biomarkers to Predict Checkpoint Inhibitor Toxicity and Response

Sophia N. Karagiannis, PhD, Professor, Translational Cancer Immunology & Immunotherapy, Kings College London

Humoral immunity is increasingly recognised as a key determinant of outcome in melanoma. This talk will focus on distinct circulating and intratumoural B cell signatures and antibody isotype profiles we found to be be linked with response and toxicity associated with immune checkpoint inhibitor immunotherapy. Humoral immune signatures conditioned in tumour environments, reveal novel biomarkers for predicting and monitoring immunotherapy efficacy.

12:15 Attend Concurrent Sessions

12:45 Luncheon in the Exhibit Hall with last Chance for Poster Viewing

4TH ANNUAL | LISBON, PORTUGAL

NEXT-GENERATION IMMUNOTHERAPIES

From TCRs to Cytokines: Redefining Clinical Immunotherapy

ONCOLYTIC AND AGONISTIC ANTIBODIES TO REPROGRAM ANTITUMOUR ACTIVITY

14:00 Chairperson's Remarks

David Cole, Head of Research, Accession Therapeutics Inc.; Honorary Professor, Cardiff University

14:05 Multimodal Biological Immunotherapy for Solid Tumours: Aglatimagene Besadenovec (CAN-2409)

Paul Peter Tak, MD, PhD, FMedSci, President & CEO, Candel Therapeutics

Our mission is to transform cancer care by activating the immune system to deliver durable clinical benefit with minimal treatment burden. Aglatimagene besadenovec is a multimodal immunotherapy designed to induce immunogenic tumour cell death and stimulate systemic anti-tumour immunity. This presentation will highlight its mechanism of action, combining localised viral-mediated cytotoxicity with pro-drug activation and immune priming. Clinical and immunological data across solid tumours demonstrates aglatimagene's therapeutic potential.

14:35 Leveraging TNFR for Antitumour Immunity: Treg Depletion and Myeloid Reprogramming Versus T Cell Co-Stimulation

Björn L. Frendeus, PhD, CSO, BioInvent International AB

TNFR2 is a co-stimulatory receptor mediating both pro- and anti-inflammatory activities in immune cells. Here, we explore how ligand-blocking and agonist anti-TNFR2 antibodies induce antitumour immunity: Treg-depletion and myeloid reprogramming versus T cell-co-stimulation. Evidence is presented that ligand-blocking anti-TNFR2 (BI-1808) has single-agent and anti-PD-1 combination activity in ovarian cancer, and that agonist anti-TNFR2 (BI-1910) expands CD4+ and CD8+ T cells—highlighting potential applications in cell therapy and cancer vaccines.

15:05 PANEL DISCUSSION: Clinical Outcomes in Immunotherapy—Where Are We Now?

Co-Moderators:

David Cole, Head of Research, Accession Therapeutics Inc.; Honorary Professor, Cardiff University

Björn L. Frendeus, PhD, CSO, BioInvent International AB

- Where are the current/best applications?
- What are the mechanisms of resistance and areas of limitations/barriers in solid tumors?
- What is the immediate vs long-term response/survival rate?
- How to better predict who will respond to which immunotherapy treatment?
- Could we extend to other indications if current therapies do not work?
- What are the rational combinations?

Panelists:

Cedrik M. Britten, CMO, Immatics Biotechnologies GmbH

Maria Gonzalez Cao, PhD, Chair, Melanoma Medical Oncology Unit, Oncology Institute Dr. Rosell, Dexeus University Hospital

Hardev S. Pandha, Honorary Professor, Urological Oncology, University of Surrey

Paul Peter Tak, MD, PhD, FMedSci, President & CEO, Candel Therapeutics

16:00 Networking Refreshment Break

ENGINEERED CYTOKINES

16:15 Updates on Clinical Trials with AB248 and AB821, CD8-selective IL-2 and IL-21 Cytokines

Ivana Djuretic, PhD, Founder & CSO, Asher Biotherapeutics

Cytokine therapies, like IL-2 and IL-21, demonstrate anti-cancer activity through enhanced proliferation, survival, and function of antigen-specific CD8+ T cells, yet off-target effects and rapid clearance have limited their clinical utility. This talk presents clinical updates on AB248 and AB821, CD8-selective cytokines from Asher Bio's cis-targeting platform engineered to precisely activate CD8+ T cells while sparing NK and regulatory T cells—improving both efficacy and safety in solid tumours.

4TH ANNUAL | LISBON, PORTUGAL

NEXT-GENERATION IMMUNOTHERAPIES

From TCRs to Cytokines: Redefining Clinical Immunotherapy

16:45 Multifunctional Antibody-Derived Receptor Agonists for Targeted Immunomodulation

Britta Lipinski, PhD Student, Biomolecular Immunotherapy, Merck Healthcare KGaA

Single domain antibodies (sdAbs) are versatile building blocks for the design of of bi- and multifunctional- antibody architectures. In this talk, I will present strategies to engineer sdAb-based antibodies that selectively agonise cytokine receptors. I will give examples on several different bi- and multi-specifics that 'mimic' the function of given cytokines in the tumour, as well as autoimmune context, and will provide mechanistic insights for the generation of such entities.

17:15 Optimal Design of Masks for Protease-Activated Biologics: What Works, What Doesn't, and Why

Julia Arizanova, PhD, Senior Scientist, Biologics Engineering, AstraZeneca

Masked biologics unlock the possibility to target antigens while limiting on-target off-tumor toxicity. When using affinity-based masks activated by proteolytic cleavage, the masks must strike a tough balance: strong inhibition of the antigen binding when the mask is covalently linked, yet also complete activation upon linker cleavage. This talk will elucidate the underlying parameters to reach a compromise between these contradictory objectives and thus enable the design of optimal masks.

17:45 Close of Summit



ANALYTICAL STREAM | 17 NOVEMBER

17TH ANNUAL | LISBON, PORTUGAL

OPTIMISATION & DEVELOPABILITY

From Sequence to Drug Readiness

TUESDAY 17 NOVEMBER

7:30 Registration and Morning Coffee

OPTIMISATION OF BI/MULTISPECIFICS AND NOVEL FORMATS

8:25 Chairperson's Remarks

Marlon Hinner, PhD, Principal Scientist, pRED, Roche

8:30 Practical, Scalable Structure-Based Modelling for Rational Engineering of Multispecifics

Saeed Izadi, PhD, Director, Research Data Sciences, Gilead Sciences

Multispecific antibodies present unique engineering challenges driven by geometry, flexibility, and format diversity, often in data-limited settings. This talk describes practical and scalable structural modeling strategies to guide rational engineering multispecific antibodies across different formats. Automated model construction and conformational sampling are used to analyse avidity, binding geometry, and surface properties, enabling design decisions that improve functional performance while addressing developability considerations early in discovery.

9:00 Modelling Biparatopic Antibody Target Engagement and Pharmacology

James Lodge, Senior Scientist, Large Molecule Research, GSK

Biparatopic antibodies are a subclass of bispecific antibodies which can simultaneously engage two epitopes on a single antigen species. This property unlocks novel target engagement and pharmacology, which we explore using *in vitro* binding and functional assays. Mathematical models were established which accurately predict the behaviour of these antibodies, requiring only SPR-derived affinities as inputs, potentially streamlining their optimisation during lead discovery.

9:30 *In silico* Approaches for siRNA AOC Optimisation

Josephine Alba, PhD, Senior Expert I Data Science, Biologics Research Center, Novartis Pharma AG

Small interfering RNAs (siRNAs) are increasingly developed as antibody–oligonucleotide conjugates (AOCs) to improve targeted delivery. Chemical modifications and antibody conjugation, however, pose major challenges for all-atom modelling. Here we summarise computational strategies for AOC–siRNA systems, with an emphasis on all-atom molecular dynamics simulations. We highlight available force-field options and structure-building workflows and note the lack of dedicated software for conjugation chemistries.

10:00 Ignite biologics developability testing in quartz plates with Aunty

UNCHAINED LABS

Andre Mueller, Marketing Mgr, Biologics Solutions, Unchained Labs

Characterizing developability of biologics candidates is increasingly complex and requires various tests on compressed timelines. Aunty combines full spectrum DSF with static and dynamic light scattering to cover all stability testing of your biologic and its formulation. Test thermal gradient, colloidal and long term stability in a 96-well quartz plate at blazing speeds – and integrate Aunty into automation for true high-throughput screening. Join my talk to see how Aunty was used in a formulation development pilot for three mAbs and in a peptide formulation concept study.

10:30 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing

11:15 Optimisation of Tailor-Made Interleukin-2 Engineered Versions for Therapy: Handling Functional Complexity and Developability Issues of a Challenging Molecule

Gertrudis Rojas Dorantes, PhD, Senior Scientist and Head, Protein Engineering and Computational Biology, Center of Molecular Immunology

Combinatorial approaches were useful to achieve multi-level optimization of Interleukin-2-derived immunomodulators, ideally suited for particular applications. Functional fine-tuning, through engineering of individual interfaces with each component of the multi-chain receptor system, resulted in responses biased to the desired immunological outcome. Phage display-based filtering steps prevented distal effects on non-targeted interfaces, and removed typical cytokine intrinsic biophysical liabilities, giving rise to a set of highly developable candidates with potent anti-tumor activity.

11:45 Multi-Objective Antibody Optimisation with Property Enhancer (PropEn)

Natasa Tagasovska, PhD, Principal Machine Learning Scientist and Scientific Manager, Prescient Design, Genentech, Roche

12:15 LUNCHEON PRESENTATION: Evaluating Alternative Approaches for His-Tagged Protein Quantification from Crude Samples: Informing Purification Decisions in Real-Time

ABSELION

Ruizhi Wang, CEO & Founder, Abselion

Quantification of His-tagged recombinant proteins directly from crude cell culture samples represents a critical bottleneck in protein expression and bioprocess workflows. Biolayer interferometry (BLI) is frequently evaluated for this application but performs inconsistently in complex crude matrices. Here we present an evaluation of the Amperia platform, based on proprietary Redox Electrochemical Detection (RED) technology, as a direct replacement for BLI for at-line His-tag quantification from crude harvested samples.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

DEVELOPABILITY AND DRUG READINESS

14:00 Chairperson's Remarks

Josephine Alba, PhD, Senior Expert I Data Science, Biologics Research Center, Novartis Pharma AG

17TH ANNUAL | LISBON, PORTUGAL

OPTIMISATION & DEVELOPABILITY

From Sequence to Drug Readiness

14:05 From Molecules to Drug Readiness

Tobias Grosskopf, PhD, Leader, F. Hoffmann-La Roche AG

This talk highlights how we leverage large-scale datasets together with domain and data science expertise to analyse and understand the drivers of CHO expression performance of complex biologics. By linking sequence- and format-level features to downstream outcomes, we establish an approach that integrates manufacturability considerations early into lead selection, which leads to improved robustness, reduced uncertainty, and overall strengthened R&D productivity.



14:35 KEYNOTE PRESENTATION: Predictive Strengths and Critical Gaps in Next-Generation Developability Workflows

Hristo Svilenov, PhD, Associate Professor, TUM

Next-generation developability workflows combine high-throughput biophysical screening and advanced computational models to flag potential liabilities early in biotherapeutic discovery. These approaches can predict issues such as aggregation and viscosity, supporting data-driven candidate selection. Yet, important gaps remain, especially in anticipating how candidates will behave in the clinic. In this presentation, I will share recent advances in developability assessment successes and discuss key challenges that still need to be addressed.

15:05 Building a Generalisable Model of Antibody Developability

Phil Maffettone, PhD, Sr Machine Learning Scientist, BigHat Biosciences

For therapeutics applications, designed molecules must also demonstrate a suite of favorable biophysical properties to be "developable." BigHat's foundational developability model lets us provide quantitative answers to the question of how much and what kind of data is needed to improve multiple developability properties for diverse therapeutic formats. We present several case studies leveraging BigHat's developability model to rapidly improve key developability properties for diverse antibody formats.

15:35 Developability assessment of complex modalities: What do we know and what is next?

PAIA

Sebastian Giehring, CEO, PAIA Biotech GmbH

We are presenting developability assays results from two different bispecifics project and discuss how developability profiles can be predcited from the behaviour of their parental mAbs. Furthermore, we are presenting recently introduced and upcoming PAIA assays, expanding the range of modalities and parameters, especially FcRn interactions.

16:05 Refreshment Break in the Exhibit Hall with Poster Viewing

16:50 Digitalizing ADC Discovery: Building an Integrated Data and Workflow Platform

Genedata

Sameh Eid, Associate Scientific Director , Digital, Data & IT Healthcare , Merck KGaA

As antibody therapeutics evolve from monoclonal antibodies to bispecifics and ADCs, research organizations face growing data and collaboration challenges. Merck's BRAIN (Biologics Research All-In-One) platform unifies discovery data, workflows, and laboratory operations within a single digital ecosystem. We will present our journey from fragmented systems to an integrated platform supporting ADC discovery through lineage tracking, data orchestration, automation, and FAIR data principles.

17:20 Machine Learning for Lead Optimisation Workflow (MeLLOw): Integrating *in silico* and Wet Lab Data for Biologics Engineering

Owen Vickery, PhD, Associate Principal Scientist, Augmented Biologics, AstraZeneca

MeLLOw is an active learning framework for multi-property antibody sequence optimisation. It combines diverse protein encodings (BLOSUM, language models, structure-aware neural networks) with an ensemble of 21 ML models and evolutionary search-to-select variants for experimental validation. Training on both experimental and *in silico* data, MeLLOw closes the loop between computation and the wet lab. A web-based GUI enables non-computational scientists to configure, launch, and analyse campaigns without writing code.

17:50 Ensuring Manufacture of Next-Generation Biopharmaceuticals by Developability (EMBeDs)

David J. Brockwell, PhD, Professor, School of Molecular and Cellular Biology, University of Leeds

30 years' cumulative experience has allowed the early identification of manufacturable standard mAb therapeutics. To allow a similar capability for more complex formats we have performed a wide range of developability assays (17 methods, 27 variables), coupled with long-term (5˚C) and accelerated (25˚C and 45˚C) stability studies on 44 next-generation mAb scaffolds comprising canonical reference mAbs, multispecifics, and Fc-fusions variants of five well-characterised mAb therapeutics.

18:20 3dpredict/Ab Ensemble-Based Developability Descriptors at Your Fingertips

Chemical Computing Group

Purvi Gupta, Applications Scientist, Field Applications, Chemical Computing Group

Predicting potential liabilities such as aggregation or viscosity is a key step in monoclonal antibody development. Computational property prediction methods are routinely used in the selection and optimization of candidate antibodies. High-quality property prediction involves prediction of ensembles of 3D structures at specified pH to reduce sensitivity to single conformational states. We will present 3dpredict/Ab, a solution that enables ensemble-based predictions of antibody developability descriptors and putative liabilities. 3dpredict/Ab allows for out-of-the-box SaaS automation and integration of such complex simulations of hundreds or thousands of sequences, making them accessible and efficient.

18:50 Welcome Reception in the Exhibit Hall with Poster Viewing

19:50 Close of Optimisation & Developability Conference

13TH ANNUAL | LISBON, PORTUGAL

ANALYTICAL CHARACTERISATION OF BIOTHERAPEUTICS

Harnessing Advanced Analytics for Complex Biologics

WEDNESDAY 18 NOVEMBER

7:30 Registration and Morning Coffee

STRUCTURAL AND BIOPHYSICAL ANALYTICS FOR COMPLEX MODALITIES

8:25 Chairperson's Remarks

Christian Graf, PhD, Fellow, Scientific Office, Novartis Technical R&D Biologics

8:30 Strategy for Evaluating Undesired Mis-Paired Variants across Bispecific Antibody Modalities

Maki Yoshida, Deputy Head, Analytical Development Department, Pharmaceutical Technology Division, Chugai Pharmaceutical Co., Ltd.

We are establishing an integrated control strategy for undesired mis-paired variants in bispecific antibodies with variable modality complexity. Analytical approaches are selected by considering separation mode, throughput, process requirements, and pairing efficiency. The quality impact of the variants is also evaluated to define appropriate control levels. This presentation illustrates these concepts with practical examples from bispecific antibody development.

9:00 From Suspension to Signal: Enabling Analytical Characterisation of Therapeutic Proteins in High-Dose Non-Aqueous Suspension Formulations

Arnelle Loebbert, PhD, Postdoctoral Researcher, Novartis

Suspension formulations comprising protein powders dispersed in non-aqueous vehicles represent a promising approach to enable high-dose subcutaneous administration of therapeutic proteins. However, robust analytical characterisation of these systems remains challenging. In this work, we evaluated multiple strategies to analyse protein quality and formulation composition of non-aqueous suspensions. Our results highlight that optimised sample preparation was critical to enable drug product characterisation with biochemical analytical techniques.



9:30 KEYNOTE PRESENTATION: Structural Biology at the Forefront of Biotherapeutics: Cryo-EM, AI, and Complex Modalities

Alexey Rak, PhD, Head, Biostructure and Biophysics, Sanofi, France

From discovery to commercialisation, structural biology underpins modern biotherapeutics. This talk traces Isatuximab's development journey while highlighting transformative technologies: cryo-EM replacing traditional structural methods and generative AI enabling rapid *de novo* design. Real-world examples from ADCs and multispecific antibodies demonstrate how these advances are accelerating development timelines and improving therapeutic outcomes.

10:00 On-Cell Kinetic Measurements Using scIC to Investigate Avidity-Driven Binding Selectivity of Multivalent ADCs

Andreas Stengl, PhD, Team Lead Antibody Engineering and Targeted Therapy, LMU MunichUniversity

10:15 Streamlining Analytical Characterization in the Era of Complex Modalities: Insights into Recent Workflow Innovations

Donna Potts, Biopharma Market Specialist, EMEA, Agilent Technologies Inc

As biotherapeutics continue to increase in number and complexity, analytical approaches must evolve to address changing characterization requirements. This session will highlight recent workflow innovations for biopharmaceutical applications across the biopharma value chain, including tools for the structural and physicochemical characterization of complex modalities such as antibody–drug conjugates. The session will also explore an LC/MS-based multi-attribute method workflow designed to support the transfer of biopharmaceutical product quality monitoring from R&D to routine quality control, with a focus on automation, data management and workflow consistency.

10:30 Coffee Break in the Exhibit Hall with Poster Viewing

11:15 Characterisation of Bacterial Glycoconjugate Vaccines by Liquid Chromatography—Mass Spectrometry

Anabel Torrente Lopez, PhD, Postdoctoral Researcher, Center for Proteomics and Metabolomics, Leiden University Medical Center

Recombinantly produced proteins carrying bacterial O-antigen glycosylation represent promising glycoconjugate vaccine candidates for the prevention of bacterial infections. Liquid chromatography–mass spectrometry (LC–MS) has become an essential tool for the comprehensive structural characterisation of their N-glycosylation profile. Here, we characterise glycoconjugates at two structural levels—glycopeptides and intact bioconjugate glycoforms—and analyse related O-polysaccharides derived from lipid-linked oligosaccharides by LC–MS.

11:45 Thermal Unfolding: From Heuristic Interpretation to Quantitative Models

Paul Molinaro, PhD, Postdoctoral Research Fellow, Biotherapeutic Development, Boehringer Ingelheim Pharma GmbH & Co. KG

This work presents an automated approach for analysing DSF traces that incorporates prior knowledge of the molecule under study. It automates the analysis of DSF thermograms, enabling scalable,

13TH ANNUAL | LISBON, PORTUGAL

ANALYTICAL CHARACTERISATION OF BIOTHERAPEUTICS

Harnessing Advanced Analytics for Complex Biologics

consistent interpretation of large datasets without manual intervention. By improving the accuracy of extracted thermodynamic parameters, it allows DSF to approach the reliability of higher-resolution techniques, expanding its utility in antibody characterisation and developability assessment.

12:15 LUNCHEON PRESENTATION: Integrated HCP Analysis by LC-MS: From Antibody Coverage to Data-Driven Risk Assessment Rezonbio

Tomasz Gozdziewicz, Analytical Development Scientist, Analytical Projects Team, Rezon Bio

Integrated HCP Analysis by LC-MS: From Antibody Coverage to Data-Driven Risk Assessment
Host cell proteins (HCPs) are complex process-related impurities that may affect biotherapeutic product quality and stability and, consequently, patient safety. Our work integrates LC-MS proteomics methods for antibody coverage testing and protein-level HCP monitoring across manufacturing stages to evaluate whether routine immunoassays effectively detect relevant process impurities. We compared process-specific and commercial antibodies and demonstrated the applicability of these reagents to process control. Combining antibody coverage data with precise HCPs identification enables practical, data-driven risk assessment, increases confidence in process control, and supports safer biopharmaceutical development.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

AI INTEGRATION AND ADVANCED ANALYTICS FOR BIOTHERAPEUTICS CHARACTERISATION

14:00 Chairperson's Remarks

Dan Bach Kristensen, PhD, Scientific Director, Symphogen

14:05 AI-Based Analysis of Label-Free Live Cell Imaging of T Cell Mediated Tumour Killing Assay Enables Competitive and Robust Hit Calling

Josefa dela Cruz-Chuh, Scientist 4, Biochemical and Cellular Pharmacology (BCP), Genentech

To identify effective immune engagers, including T cell therapies or T cell-dependent bispecific antibodies, robust screening of T cell-mediated tumour killing co-culture is crucial. Traditional imaging relies on fluorescently labeled cells, risking artifacts and phototoxicity. We introduce an AI/ML-based method utilising only brightfield images to identify phenotypic changes, eliminating fluorescent markers. This innovative approach applied to T cell-killing assays maintains consistency, enhances efficiency, and allows analysis of diverse tumour cells.

14:35 Natural Antibody Evolution, Human Expertise, and AI: The MAb-Intelligence Triad for Next-Generation Antibody Discovery

Alessandra Villa, PhD, Director, Antibody Platform Development, Kling Biotherapeutics

Antibody discovery is entering a new paradigm driven by the convergence of biology and machine intelligence. We present the MAb-Intelligence Triad, integrating natural antibody evolution from clonally expanded, somatically hypermutated B cell repertoires, human expertise in library design and directed evolution (Kling-EVOLVE), and AI models trained on large-scale paired VH–VL datasets. Using SARS-CoV-2 as a benchmark, we demonstrate prediction of improved affinity and cross-reactivity, with emerging applications in oncology/ autoimmunity.

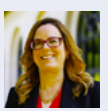
15:05 Bridging Protein and Oligonucleotide Analytics: LC-MS Strategies for Antibody- and Peptide-OligonucleotideConjugate Characterization

Nick Pittman, Senior Principal, Global Biopharma Marketing, Global Biopharmaceutical Business, Waters Corporation

Antibody- and peptide-oligonucleotide conjugates (AOCs and POCs) represent an emerging biotherapeutic modality that introduces significant analytical complexity, requiring characterization of both protein and oligonucleotide components across multiple levels. This presentation highlights a comprehensive LC-MS workflow for conjugate analysis, spanning intact molecule characterization using SEC-MS and SCX-MS through to detailed oligonucleotide and linker- payload analysis using HILIC-MS and IPRP-MS. We will also present novel strategies for conjugate mapping, including a streamlined nucleoside-assisted peptide mapping approach and a new HILIC-MS method that enables direct characterization of POC species without sample pretreatment. These workflows provide analytical scientists with practical approaches for confident identification, characterization, and monitoring of complex oligonucleotide-conjugated biotherapeutics.

15:35 Transition to Keynote session

PLENARY KEYNOTE SESSION



15:45 Chairperson's Remarks

Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

13TH ANNUAL | LISBON, PORTUGAL

ANALYTICAL CHARACTERISATION OF BIOTHERAPEUTICS

Harnessing Advanced Analytics for Complex Biologics



15:50 The Making of Multispecific Antibodies—A Clinical Perspective

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

- How has the field of multispecific antibodies evolved in recent years?
- What are the modes of action utilised by multispecific antibodies?
- What are the frequently used targets and target combinations?
- What are the emerging applications?



16:00 The Future of T Cell Engagers

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

- TCE approvals are catching up with ADC approvals
- Compelling single-agent activity in blood-borne and solid tumor indications
- Diverse formats and targets work for TCEs
- Several ways to augment the efficacy and safety of TCEs: hundred percent response rates at reach
- Treatment of minimal residual disease and target combinations
- Recent highlights pointing at the future of TCEs

16:10 FIRESIDE CHAT: Emerging Modalities and the Future of Antibody Engineering






Moderator: Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

- Bispecific antibodies and T cell engagers
- Design principles
- Complex formats: Trispecifics and costimulation
- Bispecifics compared to ADCs or CAR-T
- Next frontiers beyond cancer

Panelists:

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

Ulrike Philippar, PhD, Vice President Oncology, Global Head of Discovery, Johnson & Johnson Innovative Medicine

16:50 Refreshment Break in the Exhibit Hall with Poster Viewing

YOUNG SCIENTIST MEET-UP

IN-PERSON ONLY: Young Scientist Meet Up

Raphaelle Drean, PhD, Project Manager, Scientist, R&D, Affilogic

Iris Goldman, Conference Producer, Cambridge Innovation Institute

Leire Oyon, Research Scientist, Protein Crystallography Unit, Navarrabiomed

Isabel Waibel, Graduate Student, Biochemical Engineering, ETH Zurich

The young scientist meet-up is an opportunity for scientists entering the field to develop connections across institutions, and for established leaders to come build relationships with the next generation of scientists. The meet-up will pave the way for mentorships, professional opportunities, and scientific discovery.

- Get to know fellow peers and colleagues
- Make connections and network with other institutions
- Inspire others and be inspired!

13TH ANNUAL | LISBON, PORTUGAL

ANALYTICAL CHARACTERISATION OF BIOTHERAPEUTICS

Harnessing Advanced Analytics for Complex Biologics

CHARACTERISING POTENCY, DEVELOPABILITY AND FUNCTION

17:30 Voltage or No Voltage—That is Not the QuestionUnlocking the Potential of Electrochemically Controlled Chromatography

Christian Frech, Professor Dr, Professor, i3 Membrane GmbH

Electrically driven elution in digital Protein A membrane chromatography (DMC) offers a novel alternative to conventional low-pH elution in antibody purification. By avoiding strongly acidic elution conditions, DMC mitigates critical challenges such as antibody degradation and aggregate formation. The approach is particularly well suited for the rapid capture and release of monoclonal antibodies and other Fc-containing molecules, making it an attractive option in small-scale research and process development.

We recently elucidated the mechanism underlying electrically driven elution in DMC. The process is governed primarily by water electrolysis at the electrodes: the oxygen evolution reaction (OER) at the anode generates H_3O^+ ions, whereas the hydrogen evolution reaction (HER) at the cathode generates OH^- ions. When a voltage is applied, the generation and transport of these ions through the device produce an unexpected and complex pH profile—a phenomenon often overlooked in the field.

To better understand and control this behavior, we systematically investigated how pH-modulating additives and excipients—including salts, electrochemically active compounds, and detergents—affect the elution process. In parallel, we are scaling up the technology, which shows promise both as a tool for rapid analytical workflows in early-stage antibody development and as an alternative primary capture step in downstream processing.

18:00 Design of Potency Assays in Development of Standard and Complex Biologics

Petr Obrdlik, PhD, Associate Director, Analytical Development Bioanalytics, R&D, Novartis Biologics, Switzerland

Potency assays are indispensable for biologics development and for understanding how drug quality attributes affect bioactivity. However, establishing potency assays that are robust enough for quality control often requires significant effort. In this presentation, we discuss phase-appropriate strategies—supported by examples—for selecting and developing mechanism-of-action-relevant potency assays for both standard and complex biologics.

18:30 High-Throughput Automation Platform for Miniaturised Biophysical Assays: Accelerating Compound Screening with One Click

Gonçalo Silva, Senior Research Scientist, Biophysics & Injectable Formulation 1, Novo

Biophysics screens are crucial to accelerate discovery and lead optimisation as they predict developability risks. We have established an end-to-end high-throughput automation platform for miniaturised biophysical assays. Through a user-friendly interface, with a single click we can pull sample metadata, start robotic workflows, and register samples, plates, and data in internal databases and ELNs, enabling data readiness for compound screening, lead selection, formulation development, and for ML models.

19:00 Decoding Macrophage-Fibroblast Cross-Talk to Enable Next-Generation Anti-Fibrotic Therapies

Daniel M. Simão, PhD, Head, Bayer Pharma Satellite Lab, Instituto de Biologia Experimental e Tecnológica (iBET)

Effective anti-fibrotic biotherapeutics are limited by insufficient human-relevant analytical frameworks linking immune modulation to tissue outcomes. We present an immune-competent, human iPSC-based platform that resolves macrophage–fibroblast crosstalk in cardiac fibrosis. Integrating spectral flow cytometry with functional co-culture assays, we map macrophage phenotypic states to fibroblast activation and extracellular matrix responses, enabling mechanism-linked potency assessment of macrophage-targeting biologics.

19:30 Close of Analytical Characterisation of Biotherapeutics Conference

13TH ANNUAL | LISBON, PORTUGAL

PROTEIN STABILITY & FORMULATION

From Prediction to Delivery

THURSDAY 19 NOVEMBER

8:00 Registration and Morning Coffee

BIOPHYSICAL STABILITY AND AGGREGATION

8:25 Chairperson's Remarks

Patrick Garidel, PhD, Head, Process, Purification, and Pharma Development, Biopharma, Boehringer Ingelheim Pharma GmbH, Germany

8:30 Mechanistic Understanding of an Unusually Stable Succinimide Intermediate in an Antibody Therapeutic

Goran Miličić, PhD, Senior Expert, Science & Technology, Novartis

Succinimide formation is a critical degradation pathway in antibody therapeutics, typically leading to aspartate and isoaspartate products. In my talk, I will describe the experimental identification of an unusually stable succinimide intermediate in an antibody therapeutic. To understand the structural and dynamic basis of this stability, we performed molecular dynamics simulations based on an X-ray structure, revealing features that stabilise the succinimide ring and influence its degradation pathway.

9:00 Colloidal Stability Prediction of Multivalent NANOBODY Molecules Using Machine Learning

Eric Lorent, PhD, Principal Scientist, Sanofi

Multivalent NANOBODY molecules face colloidal stability challenges which are not predictable from their monovalent building blocks. With specific data gathering campaigns, we could show that kD-DLS (diffusion interaction coefficient) correlates well with colloidal stability. We then developed a machine learning model predicting kD-DLS from sequence descriptors and formulation conditions. This enables early high-throughput screening of constructs compatible with high-concentration subcutaneous administration, in turn mitigating developability risks.

9:30 Presentation to be Announced

10:00 Coffee Break in the Exhibit Hall with Poster Viewing

10:45 Decoding Photodegradation of ADC Payloads: Integrating *in silico* Modelling with Experimental Evidence to Understand and Predict Stability

Giuseppe L. Licari, PhD, Principal Scientist, Computational Structural Biology, Global Drug Product Development—BDC, Merck Serono SA

Photodegradation of antibody-drug conjugates (ADCs) is an often-overlooked stability liability. Using camptothecin-based payloads, we combine quantum mechanical calculations, molecular dynamics simulations, and experimental photostress data to characterise photodegradation pathways and their consequences for ADC quality. *In silico* approaches rationalise observed discolouration, aggregation, and charge heterogeneity, linking degradation products to their physicochemical properties. This integrated computational-experimental framework offers a generalisable strategy for early-stage photostability risk assessment of ADC drug products.

11:15 A Multiplexed Approach to Protein Aggregation: Resolving Heterogeneity from Particles to Interfaces

Vito Foderà, PhD, Professor, Biophysics, University of Copenhagen

Protein aggregation poses a challenge in biotherapeutic development, where heterogeneous particle populations and stochastic kinetics complicate mechanistic understanding and formulation design. I will introduce two methodologies: chemical fingerprinting of single protein particles via Raman microscopy, enabling compositional discrimination of micrometre species, and spatially resolved plate-reader fluorescence for quantitatively mapping the role of interfaces in driving protein aggregation. These tools offer a path toward predictive, mechanism-informed strategies for developing biotherapeutic formulations.

11:45 Insights into Fab Nebulisation: How to Minimise Aggregates for Inhaled Biologics

Marlon Hinner, PhD, Principal Scientist, pRED, Roche

This talk explores strategies for suppressing Fab fragment aggregation during nebulisation. Our data shows that high-intrinsic thermostability and high-concentration formulations are critical for stability during aerosolisation. We introduce a qualitative model explaining the counterintuitive protective effect of high concentrations and discuss broader stability implications. These findings provide clear guidance for achieving virtually aggregation-free nebulisation, aimed to minimise immunogenicity risks and facilitate the development of next-generation inhaled protein therapeutics.

12:15 Attend Concurrent Sessions

12:45 Luncheon in the Exhibit Hall with last Chance for Poster Viewing

13TH ANNUAL | LISBON, PORTUGAL

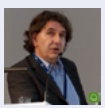
PROTEIN STABILITY & FORMULATION

From Prediction to Delivery

NOVEL DELIVERY AND FORMULATION STRATEGIES

14:00 Chairperson's Remarks

Goran Miličić, PhD, Senior Expert, Science & Technology, Novartis



14:05 KEYNOTE PRESENTATION: What Have We Learned from a Decade of Research into Polysorbate Degradation?

Patrick Garidel, PhD, Head, Process, Purification, and Pharma Development, Biopharma, Boehringer Ingelheim Pharma GmbH, Germany

- Polysorbate degradation: mechanistic differentiation
- Impact of drug product quality
- Mitigation strategies: a holistic view
- Alternative surfactants

14:35 Molecular Dynamics Analysis toward Understanding Formulation-Dependent DSC Behaviour of IgG1 Antibody

Kota Yamaguchi, Scientist, Formulation Development Department, Parenteral Platform Technology Group, Chugai Pharmaceutical Co., Ltd.

Thermodynamic stability assessed by differential scanning calorimetry (DSC) is a key indicator in antibody formulation; however, thermodynamic parameters alone cannot elucidate excipient-induced stabilisation mechanisms at the molecular level. We report molecular dynamics simulations revealing the molecular origins of DSC parameter changes in arginine formulations with different counterions. Counterion-dependent reorganisation of hydrogen-bond networks and component distributions provides molecular descriptors for interpreting DSC trends.

15:05 Pushing the Subvisible Gap: Characterization of Sub-10 Micron Particles of Pharmaceutical Relevance

Kevin Dahl, Ph.D., Director Pharmaceutical Products and Applications, Sales and Marketing, Photothermal Spectroscopy Corp

Characterization of subvisible particles remains a challenge for pharmaceutical manufacturers, particularly below 10 µm. O-PTIR microspectroscopy bridges this gap, enabling chemical characterization below 500 nm. Applications include biopharmaceutical particle identification, multicomponent particle mapping, solid dosage formulations and inhaled product characterization.

INTERACTIVE DISCUSSIONS

15:35 Find Your Table and Meet Your Moderator

Interactive Breakout Discussions are informal, moderated discussions, allowing participants to exchange ideas and experiences and develop future collaborations around a focused topic. Each discussion will be led by a facilitator who keeps the discussion on track and the group engaged. To get the most out of this format, please come prepared to share examples from your work, be a part of a collective, problem-solving session, and participate in active idea sharing. Please visit the Interactive Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

TABLE 6: High-Dose Options for the Diverse Biologics Modalities and the Unknowns

Karoline B. Bechtold-Peters, PhD, Director, Science & Technology, Drug Product Development Biologics, Novartis Pharma AG

- Why do we need higher doses and for which (biologics and hybrid) modalities and indications?
- What technical options are available for achieving higher doses (from formulation to devices and both)?
- What are the pros and cons and limitations for the options? How mature are the options?
- What are the unknowns that need to be explored? Does it make sense to teaming as industry e.g. via consortia?
- What are regulatory trends here?

IN-PERSON ONLY BREAKOUT: TABLE 7: Novel AI Architecture for Protein Stability Design

Benjamin J. Hackel, PhD, Professor, Chemical Engineering & Materials Science, University of Minnesota

A multitude of platforms have emerged for computational design of protein developability. This roundtable will discuss factors that will drive development of improved platforms and enable optimal use of available tools.

- Compare and contrast current platforms with rigorous benchmarking.
- Ideate new approaches including hybrids of emerging tools, both computational and experimental.
- Identify best practices for training and evaluation.
- Discuss most impactful opportunities for experimental data.?

16:15 UTAC: Engineering a Bispecific That Converts Clinical Antibodies into Oral Formulations Using Active Retro-Transcytosis

Maurits F. Kleijnen, PhD, Chief Technology Officer, Intract Pharma Ltd.

Our aim is to convert any clinical antibody or protein therapeutic, all of which are injectables, into oral pill formulations. We've developed a bispecific protein therapeutic (UTAC) consisting of a human



pancreatic enzyme fused to anti-IgG moieties. Co-formulating UTAC with a clinical antibody, and leveraging Intract's core pharmacy technologies, achieves high antibody bioavailability in blood in mice after intraduodenal administration. Finally, we'll present impressive UTAC pilot data from cynomolgus macaque.

16:45 Beyond PEGylation: INCYPRO-Stabilisation of Asparaginase Enables Long-Acting Enzyme Therapy for Acute Lymphoblastic Leukemia

Saskia Neubacher, PhD, CSO, R&D, Incircular B.V.

Therapeutic enzymes remain limited by instability, aggregation, and short circulating half life, with PEGylation often used at the expense of tolerability and safety. We present a structure-guided protein stabilisation approach that reinforces native protein folds omitting polymer conjugation. Using asparaginase as a case study, we show how topological stabilisation enables a long-acting, non-PEG enzyme format with preserved catalytic function and improved developability for the treatment of ALL.

17:15 Bayesian Optimisation for Efficient Multi-Objective Formulation Development of Biologics

Isabel Waibel, Graduate Student, Biochemical Engineering, ETH Zurich

The development and formulation of therapeutic antibodies is a highly complex optimisation task requiring significant time and resources. Specially engineered antibody formats, such as fragments and bispecifics, suffer from developability issues, hampering their translation into successful therapeutics. To address these challenges, we have developed an efficient method to accelerate formulation design based on Bayesian optimisation.

17:45 Close of Summit

LEVERAGING DATA SCIENCE FOR ENHANCED EXPRESSION AND PRODUCTION

Turning Data into Predictable Protein Production

TUESDAY 17 NOVEMBER

7:30 Registration and Morning Coffee

INTEGRATING DATA PIPELINES TO ENABLE FASTER DATA DRIVEN DECISIONS

8:25 Chairperson's Welcome Remarks

Patrícia Gomes-Alves, PhD, Lab Head, Animal Cell Technology Unit, Instituto de Biologia Experimental e Tecnológica (iBET)



8:30 FEATURED SPEAKER: "EXPERT" A Structured Framework for Capturing Protein Expression and Purification Data to Develop Machine Learning Models

Nicola Burgess-Brown, PhD, Professorial Research Fellow, UCL, London; COO, Protein Sciences, Structural Genomics Consortium

A standardised template for reporting protein expression and purification data is proposed to improve reproducibility and predictive modelling. Metadata are prioritised as critical, highly enabling, or optional, with negative results included. The framework aims to generate diverse, machine-usable datasets that support predictive models, improve construct design and reduce empirical screening, ultimately accelerating the path from digital design to purified protein.

9:00 IVTT-Accelerated Protein Discovery: Generating Fit-for-Purpose AI Training Data

Frederikke Bjergvang Flagstad, Senior Automation Scientist, Cross Modality Workflows, Novo Nordisk AS

Teaching AI models' protein prediction can be slow and cumbersome, where design cycles take months and require specialist expertise across teams. The data research teams have is not suitable for training models because it is generated to support a project and is not standardised. Using IVTT, integrated liquid-handlers, and automated data analysis, we streamline the process and generate fit-for-purpose data. In 7 days, we go from DNA to analysed data.

9:30 Building the Protein Lab of the Future at AstraZeneca: Automation First Science and AI Ready Data at Scale

Stan Blein, PhD, Senior Director and Head, Protein Sciences & Analytics, AstraZeneca

AstraZeneca's Protein Sciences & Analytics is building the lab of the future based on an automation-first operating model and AI-ready data capture. The enterprise-scale blueprint is grounded in harmonised ways of working, small- and large-scale HT expression platforms, and integrated data pipelines. The ongoing transformation has already shown measurable impact on DMTA timelines and first-pass success and aims to be transferable across modalities and sites.

10:00 Wet-Lab Data Acquisition for Rapid Iteration of AI-Powered Macromolecular Drugs

BIOINTRON

Lei Shi, Senior Vice President, R&D, Biointron

AI-driven antibody design now generates millions of candidates per cycle—but the bottleneck has shifted to the wet lab and how quickly candidates can be characterized well enough to retrain the models that designed them. We present Biointron's RushData platform: a standardized, CHO-based pipeline delivering titer, affinity, stability, and specificity data in days, in both human-readable and AI-ready formats. Backed by 3,000+ antibodies/batch manufacturing capacity, we show how integrated data generation joins the AI design loop directly.

10:30 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing

DECODING GENETIC RULES TO BOOST EXPRESSION

11:15 CANCELLED: High-Throughput Biophysical Data Generation as the Missing Link in AI-Driven Protein Design

Nikolay Dobrev, PhD, Founder & CEO, Data Powered Therapeutics GmbH

High-throughput biophysical data generation is emerging as the missing link in AI-driven protein design. We present a platform for scalable production of diverse drug targets combined with multi-modal characterisation (nano-DSF, BLI, SPR, FIDA). By capturing protein state and binding interactions—particularly for VHHs—at high granularity, we generate paired datasets that expand data diversity and quality, enabling more robust, generalisable, and predictive AI models for protein engineering.

11:45 Nanobody Discovery with AI-designed Soluble Analogues of Membrane Proteins

Nicolas M. Goldbach, Research Scientist, Lab of Protein Design & Immunoengineering, EPFL Lausanne

Membrane proteins are important drug targets, but their expression and purification can be challenging and delay drug development. Recent advances in computational protein design enabled the engineering of water soluble, stable analogues that accurately mimic epitopes of their native counterparts. This presentation will explain the development and validation of membrane protein analogues and highlight their application and benefits through an example of nanobody discovery and characterisation.

12:15 Attend Concurrent Sessions

12:45 Luncheon in the Exhibit Hall with Poster Viewing

BRIDGING COMPUTATIONAL DESIGN AND PROTEIN PRODUCTION

14:00 Chairperson's Remarks

Rivka Isaacson, PhD, Professor of Molecular Biophysics, Department of Chemistry, King's College London

LEVERAGING DATA SCIENCE FOR ENHANCED EXPRESSION AND PRODUCTION

Turning Data into Predictable Protein Production

14:05 From Data Science to Fine-Tuning Codon Optimization for High-Yield Protein Production in *E. coli*

Greg Boel, PhD, Principal Investigator, CNRS

Based on experimental data, we developed a codon-efficiency metric to improve the expression of recombinant proteins in *Escherichia coli*. Codon content influences expression more strongly than mRNA folding, except in early codons, by modulating translation and mRNA degradation. An A-rich, G-poor composition in the first six codons enhances expression and mRNA stability. These findings were integrated into an algorithm to optimise protein production.

14:35 Deep Mutational Learning for the Precision Engineering of Enzymes and Biosensors

Alperen Dalkiran, PhD, Postdoctoral Research Associate, School of Informatics, University of Edinburgh

Engineering proteins with tailored functions remains a challenge in biotechnology. We present a deep mutational learning framework integrating high-throughput screening with machine learning to engineer enzymes and biosensors. Applied to myoglobin peroxidase activity and the allosteric transcription factor HucR, our approach uses protein language model embeddings and neural networks trained on experimental data to predict high-performing variants. Experimental validation confirmed substantial improvements, demonstrating a generalisable strategy for data-driven protein engineering.

15:05 Data Driven Optimisation of High-Throughput Protein Expression Systems

Julian Englert, MS, Co-Founder and CEO, Adaptyv Biosystems

We present our experience expressing over 80,000 AI-designed proteins using cell-free systems, systematically evaluating expression tags, codon optimisation strategies, and system variants. Applying our automated cloud laboratory for high-throughput protein validation we describe integrating these workflows into this fully automated platform capable of expressing arbitrary customer proteins at scales from sub-microgram to milligram quantities.

15:35 From Design to Function: Method Optimization of An Integrated Pipeline for Miniprotein Discovery

Alessia Porta, Research Scientist, Molecular Biochemistry & Pharmacology, Mario Negri Institute For Pharmaceutical Research

Leveraging computational protein design, we developed an integrated pipeline to generate miniprotein binders against targets of interest. A modular Golden Gate-compatible pJL1 plasmid and optimised cell-free protein synthesis (CFPS) enabled rapid and cost-effective in-house production. Combined with TwinStrep-mediated capture, SPR-based hit screening directly from crude extracts enabled functional validation without intermediate purification. This integrated approach establishes a transferable framework for accelerating binder discovery through rapid, economical production and purification-free screening.

15:50 Development of a Stable CHO-K1 Cell Line Producing a Humanized Anti-IL7R Antibody Through Site-Specific Integration

Manuela A.G. Vicinança, Research Scientist, Genetics & Evolution, University Estadual de Campinas

Therapeutic antibody production requires reliable and reproducible platforms. This project aims to establish a stable CHO-K1 cell line producing a humanized anti-IL7R antibody for research in pediatric acute lymphoblastic leukemia (ALL). Using CRISPR/Cas9-mediated site-specific integration, the antibody expression cassette will be inserted into the C12orf35 locus through homology-directed repair (HDR). The study encompasses guide RNA design, plasmid development, transfection evaluation, and molecular validation of targeted integration.

16:05 Refreshment Break in the Exhibit Hall with Poster Viewing

16:50 Characterization of Vector Integration of ProteoNic 2G UNic(R) Transposon Technology

Annemarie de Jel, PhD, Senior Scientist, R&D, ProteoNic BV

Increasing gene copy number alone does not guarantee higher protein production; transcription and translation efficiency remain critical. Combining 2G UNic vectors with transposon-mediated integration increased gene copy numbers and protein titres. Some clones exceeded 20 gene copies, with most showing no random integration. Across multiple molecules, titres in stably transfected CHOZN-GS bulk pools more than doubled. The presentation will examine how integration and expression efficiency contribute to these productivity gains.

17:05 Directed Transposition Accelerates Stable Membrane-Protein Expression

Anett Ritter, PhD, Senior Principal Scientist, Antigen and Therapeutic Protein Production, Novartis Pharma AG

Membrane protein-expressing cell lines are essential for antibody discovery, whole-cell phage display, hit screening, and bioassays. However, generating stable cell lines for diverse membrane proteins often requires tailored approaches. Here, we evaluated the DirectedLuck transposase for research cell line development. The system accelerated generation of high-expressing stable pools and supported sustained transgene expression, providing an efficient platform for streamlined and robust cell line development.

LEVERAGING DATA SCIENCE FOR ENHANCED EXPRESSION AND PRODUCTION

Turning Data into Predictable Protein Production

17:20 Deep Learning and Mechanistic Models to Optimise Heterologous Protein Expression Titres

Eran Miller, Co-Founder & CEO, MNDL Bio

Heterologous protein expression is frequently bottlenecked by inefficient transcription and translation dynamics. We present a host-aware platform combining deep learning with mechanistic models to computationally optimise sequences at both the DNA and mRNA levels. By integrating original algorithms validated across multiple expression systems, the framework balances transcriptional efficiency, mRNA stability, and translation kinetics. This data-driven approach significantly increases recombinant titres, replacing empirical trial-and-error with predictable digital sequence design.

17:50 REM-BAC - A Scalable Path to Precision Engineered Producer Cell Lines

Sophie Huber, PhD Student, Department of Biotechnology and Food Science, Institute of Molecular Biotechnology, BOKU University

REM-BAC, our novel baculovirus-based platform for generating stable mammalian producer lines, represents a versatile, cell type independent, cost-effective platform incorporating several key advantages of the conventional BacMam technology: preferable biosafety profile, efficient transduction of various cell types, delivery of large DNA cargos. In combination with site-specific genome integration of large transgenes with customisable expression levels and integration of transgenes without leaving viral footprints, it ensures scalable manufacturing of next-generation biopharmaceuticals.

18:05 PANEL DISCUSSION: Beyond the Bench: Harnessing Data to Advance Protein Science

Moderator: Nicola Burgess-Brown, PhD, Professorial Research Fellow, UCL, London; COO, Protein Sciences, Structural Genomics Consortium

Machine learning (ML) can uncover relationships between protein sequence and function and support rational protein design for recombinant production, including predicting production success. However, ML relies on large, high-quality datasets. This panel will explore the challenges of data collection needed to build effective and reliable models.

- What challenges remain?
- What data should be captured, in what format, and for what purpose?
- Comprehensive data collection—when is enough data enough?

Panelists:

Christopher Cooper, DPhil, Senior Lecturer in Biotechnology, University of Surrey

Nikolay Dobrev, PhD, Founder & CEO, Data Powered Therapeutics GmbH

Julian Englert, MS, Co-Founder and CEO, Adaptyv Biosystems

Maren Schubert, PhD, Junior Research Group Leader, Virus-Like-Particle Based Technologies, Helmholtz Center for Infection Research

18:50 Welcome Reception in the Exhibit Hall with Poster Viewing

19:50 Close of Leveraging Data Science for Enhanced Protein Expression Conference

19TH ANNUAL | LISBON, PORTUGAL

DESIGNING HIGH-PERFORMANCE EXPRESSION PLATFORMS

Engineering Cell Factories for Recombinant Success

WEDNESDAY 18 NOVEMBER

7:30 Registration and Morning Coffee

ENGINEERING & OPTIMISING EXPRESSION PLATFORMS

8:25 Chairperson's Remarks

Bjørn Voldborg, MSc, Head, National Biologics Facility, DTU Bioengineering, Technical University of Denmark



8:30 FEATURED SPEAKER: RMCE-Enabled Genome-Wide CRISPR Screening for High-Performance CHO Cell Engineering

Gyun Min Lee, PhD, Professor, Graduate School of Engineering Biology, KAIST

Current mammalian cell engineering often targets known pathways, but key production traits are polygenic and context dependent, limiting generalisability. CRISPR/Cas9 enables pooled screens to uncover novel regulators, though lentiviral delivery has limitations. Recombinase-Mediated Cassette Exchange offers a precise, non-viral alternative. This presentation highlights RMCE-based CRISPR screening design strategies to enhance therapeutic protein production in CHO cells and HEK293 cells.

9:00 Methods and Technologies for Customisable Protein Expression in CHO Cells

Lindsey Pearson, PhD, Senior Scientist, Protein and Cellular Sciences, GSK

Recombinant protein expressing cell lines are essential tools in drug discovery. However, achieving bespoke, physiologically relevant expression levels remains a significant challenge. This talk describes approaches to control protein expression levels in mammalian cell systems, drawing on work from an internal PhD project and the cell line generation team at GSK. Methods covering different points of regulation will be discussed, as well as applications to membrane proteins and complex targets.

9:30 Automated CHO Cell Engineering: Diagnosing and Resolving Biosynthetic Bottlenecks within 4 Weeks

Adam Brown, Professor of Biopharmaceutical Engineering, University of Sheffield; Co-Founder, Silvia Bio and Syngensys

CHO cells exhibit specific cellular productivities far below theoretical maximums, primarily due to suboptimal allocation of biosynthetic capacity. We have developed (i) an automated analytical technology that can identify the exact critical cellular parameters restricting productivity, and (ii) highly-specific chemical additives that can optimally titrate those parameters to 'rewire' the cell and release previously untapped biosynthetic capacity. This rapid 'diagnose-and-fix' process can achieve significant improvements in product titre and quality.

10:00 PURExfrex—The Rebuilt Protein Factory

Takashi Ebihara, COO, GeneFrontier Corp.

PURExfrex is a rebuilt, cell-free protein expression system that redefines how proteins are produced and explored. Its modular architecture offers researchers precise control at the molecular level, making it exceptionally adaptable to a wide range of applications—from expressing challenging biologics to enabling high-throughput workflows. Whether you're working on therapeutic proteins, novel modalities, or synthetic biology prototypes, PURExfrex provides a flexible and efficient foundation. When paired with AI/ML platforms, it becomes a powerful accelerator for innovation in protein engineering and discovery.

10:15 From Cell Engineering to LC–MS: Building Predictable Glycosylation Platforms

Abdullah Karacorluoglu, BD Manager, FyoniBio

Lena Tholen, Director, Cell Line & Bioprocess Development, FyoniBio

Glycosylation governs efficacy, clearance and immunogenicity, making it a defining quality attribute of biopharmaceuticals, yet it is still discovered late rather than designed early. This talk pairs design with readout. Cell line engineering and co-expression tune N-glycan sialylation and core fucosylation, and generate defined aberrant O-glycoforms. For both, LC-MS glycan profiling quantifies the pool while glycopeptide mapping resolves it per site, steering the next engineering round.

10:30 Coffee Break in the Exhibit Hall with Poster Viewing

11:15 Integrating Genome-Wide CRISPR Screening and Host Cell Engineering in HeLaS3 Producer Lines for rAAV Production

Filipa A. Moura, Research Scientist, Animal Cell Technology Unit, Instituto de Biologia Experimental e Tecnológica (iBET)

To address challenges of rAAV manufacturing, we performed systematic gain- and loss-of-function screens in the HeLa-S3 platform. We generated a comprehensive gene-level map of host determinants for rAAV biogenesis, identifying multiple pathways that serve as targets for host engineering. We identified CEBPA/B as a central regulatory node. The resulting CEBPA-overexpressing host, combined with process intensification, enabled a 10-fold increase in volumetric rAAV productivity, establishing a scalable alternative for rAAV production.

11:45 Application of Expression Strategies for Integral Membrane Protein Production

Jenny Gunnarsson, Associate Principal Scientist, AstraZeneca

Expression of pure and functional membrane proteins in sufficient amount remains a challenge within drug discovery. We present our platform for efficient membrane protein production in eukaryotic cells, and the strategies we have applied to overcome challenges with expression and purification. This

19TH ANNUAL | LISBON, PORTUGAL

DESIGNING HIGH-PERFORMANCE EXPRESSION PLATFORMS

Engineering Cell Factories for Recombinant Success

includes an engineered HEK293 host cell line for improved yields, a GPCR toolbox-enabling generation of stable GPCR-G protein complexes, and expression optimisation of solute carrier protein family.

12:15 LUNCHEON PRESENTATION: From Design to Data in 4 Days: Accelerating the AI Drug Discovery Loop

Hanying Luo, PhD, Director, Emerging Applications, Marketing, GenScript USA Inc

AI is transforming drug discovery, but experimental validation remains a critical bottleneck. GenScript bridges this gap with an integrated, high-throughput Build & Test platform combining rapid protein expression with binding and developability characterization. Enabling sequence-to-data workflows in as few as four days, GenScript delivers high-quality, multidimensional experimental data to accelerate design iterations and close the AI drug discovery loop.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

PRODUCTION OF FUNCTIONAL PROTEIN ASSEMBLIES

14:00 Chairperson's Remarks

Richard Altman, MS, Field Application Scientist, Thomson Instrument Company

14:05 Metabolic Shutdown in Bacteria—New Prospects for Antimicrobials

Rivka Isaacson, PhD, Professor of Molecular Biophysics, Department of Chemistry, King's College London

If bacteria encounter stress conditions, and lifestyle-switch to become dormant spores, they must shut down their metabolism. I will present our latest data on an adaptor/chaperone/protease system which mediates this process, presenting a novel target for antimicrobials. I'll chart our protein-production journey from navigating misinformation from AlphaFold, optimising expression and assembly of the complex, overcoming preferred orientation problems in cryo-electron microscopy, to designing variants to probe its function and dynamics.

14:35 Robust TCR Production for the Structural Study of TCR-pMHC Complexes

Leire Oyon, Research Scientist, Protein Crystallography Unit, Navarrabiomed

Understanding TCR-pMHC interactions at the structural level is vital for immunotherapy. While traditional refolding methods are labor-intensive, we present a simplified strategy for efficient soluble TCR production in CHO cells. By removing N-glycosylation, we streamlined the workflow, requiring only 20 ml of culture to screen over 350 crystallisation conditions. Our results for two TCRs yielded high-resolution structural data, offering a robust alternative to facilitate TCR research and therapeutic development.

15:05 Unlocking Novel Modalities with Light-Inducible Expression

Kiana Mohajeri-Stickels, Head, Synthetic Biology, Prolific Machines

Light enables precise and dynamic control of gene expression, boosting titers across modalities: 21 g/L mAb fed-batch titer and >3.3x titer improvements for difficult-to-express proteins. In partnership with the Gates Foundation, Prolific's optogenetic platform has demonstrated bench-scale fed-batch titers of up to 17 g/L for the MAM01 malaria mAb. We will discuss our high-productivity optogenetic expression platform, with product quality as a key consideration, alongside opportunities for enabling chain control, shortened development timelines, and reduced screening burden for next-generation multispecifics.

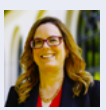
15:20 Using State-of-the-Art DNA Design and Engineering to Improve GS-CHO Expression and Biomanufacturing Outcomes

Peter O'Callaghan, Senior Director & Head, Expression Systems Sciences, Lonza

As biologics become increasingly complex and development timelines shorten, advanced expression technologies are needed to improve productivity, stability and process efficiency. We will present a novel DNA design and engineering approach within the GS Gene Expression System® platform that enhances glutamine synthetase selection stringency and improves protein expression. By generating highly productive, stable bulk pools within a streamlined, MSX-free workflow, this advanced vector technology accelerates progression from DNA to lead clone and supports the development of high-performing cell lines for biomanufacturing.

15:35 Transition to Keynote session

PLENARY KEYNOTE SESSION



15:45 Chairperson's Remarks

Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

19TH ANNUAL | LISBON, PORTUGAL

DESIGNING HIGH-PERFORMANCE EXPRESSION PLATFORMS

Engineering Cell Factories for Recombinant Success



15:50 The Making of Multispecific Antibodies—A Clinical Perspective

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

• How has the field of multispecific antibodies evolved in recent years?

• What are the modes of action utilised by multispecific antibodies?

• What are the frequently used targets and target combinations?

• What are the emerging applications?



16:00 The Future of T Cell Engagers

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

- TCE approvals are catching up with ADC approvals
- Compelling single-agent activity in blood-borne and solid tumor indications
- Diverse formats and targets work for TCEs
- Several ways to augment the efficacy and safety of TCEs: hundred percent response rates at reach
- Treatment of minimal residual disease and target combinations
- Recent highlights pointing at the future of TCEs

16:10 FIRESIDE CHAT: Emerging Modalities and the Future of Antibody Engineering






Moderator: Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

• Bispecific antibodies and T cell engagers

• Design principles

• Complex formats: Trispecifics and costimulation

• Bispecifics compared to ADCs or CAR-T

• Next frontiers beyond cancer

Panelists:

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

Ulrike Philippar, PhD, Vice President Oncology, Global Head of Discovery, Johnson & Johnson Innovative Medicine

16:50 Refreshment Break in the Exhibit Hall with Poster Viewing

YOUNG SCIENTIST MEET-UP

IN-PERSON ONLY: Young Scientist Meet Up

Raphaelle Drean, PhD, Project Manager, Scientist, R&D, Affilogic

Iris Goldman, Conference Producer, Cambridge Innovation Institute

Leire Oyon, Research Scientist, Protein Crystallography Unit, Navarrabiomed

Isabel Waibel, Graduate Student, Biochemical Engineering, ETH Zurich

The young scientist meet-up is an opportunity for scientists entering the field to develop connections across institutions, and for established leaders to come build relationships with the next generation of scientists. The meet-up will pave the way for mentorships, professional opportunities, and scientific discovery.

• Get to know fellow peers and colleagues

• Make connections and network with other institutions

• Inspire others and be inspired!

19TH ANNUAL | LISBON, PORTUGAL

DESIGNING HIGH-PERFORMANCE EXPRESSION PLATFORMS

Engineering Cell Factories for Recombinant Success

PRODUCTION OF FUNCTIONAL PROTEIN ASSEMBLIES *(CONT.)*

17:30 Gibco ExpiCHO K1 PRO Prototype Expression System: High-Yield, Fast, and Scalable Transient Protein Expression in CHO-K1 Cells

Jonathan Zmuda, Senior Director, R&D, Protein & Viral Vector Expression Systems, Thermo Fisher Scientific Inc.

The ExpiCHO K1 PRO Expression System is a next-generation transient expression platform developed to enable rapid, scalable, high-yield production of recombinant proteins in a CHO-K1 based host. The system utilizes a clonally derived, high-expressing CHO-K1 cell line optimized for transient protein production in 5–7 days, with flexibility to express up to 14 days and demonstrated maximum titers up to 6 g/L.

18:00 Purifying Challenging Multi-Protein Complexes for Structural Studies: Recombinant Expression vs. Purification of Endogenous Complexes from Engineered Cell Lines

Arnaud Poterszman, PhD, Research Director, Integrated Structural Biology, IGBMC

Macromolecular complexes are crucial for cellular processes, but studying their structure and function requires producing them in high quality and quantity. This presentation outlines our strategies for recombinant expression, including a multigene expression toolbox designed to optimise the reconstitution of medium- to large-scale multi-protein complexes. Additionally, we will discuss purification and characterisation of these complexes from endogenous sources using CRISPR/Cas9-edited cell lines.

18:25 Robust Production of Virus-Like Particles in HEK293 Cell Lines

Alfred M. Engel, PhD, Teamlead, Cell Culture Technology, Roche Diagnostics GmbH

Virus-like particles feature high-density presentation of natively folded antigens required for early detection of human IgM antibodies. However, robust large-scale production of VLPs is challenging. While the use of our stable CHO-K1 platform resulted in low expression levels and improper VLP processing, clonal cell lines of an optimised HEK293 platform produced properly assembled Dengue and Rubella VLPs, as well as Hepatitis A capsid, in high quality suitable for assay development.

18:50 Development of an Orthoflavivirus-Like Particle (Orthoflavi-VLP) Pipeline for Therapeutic and Diagnostic Applications

Luca Schelle, PhD, Researcher, Immunology & Infection & Pandemic Research IIP, Fraunhofer ITMP

Arboviruses of the genus *Orthoflavivirus* remain a persistent and re-emerging global health threat. Virus-like particles (VLPs) are safe, efficient tools that mimic native antigenicity, providing a versatile platform for developing reliable diagnostics, assays, vaccines, and immunotherapies. We established a streamlined pipeline for the production, purification, and characterisation of authentic Orthoflavi-VLPs serving as mimetic surrogates for live viruses in suitable applications, leveraging their unique advantages.

19:15 A Molecular Playground: Building Virus-Like-Particles in Insect Cells

Maren Schubert, PhD, Junior Research Group Leader, Virus-Like-Particle Based Technologies, Helmholtz Center for Infection Research

Virus-like-particles (VLPs) can be produced by co-expression of viral structural proteins and offer various options of modifications for specific applications. This talk will be about the plasmid-based production of diverse VLP formats in insect cells the following purification strategies as well as the in-depth analysis of the obtained complex VLPs including special nano-cytometry. Finally examples of applications will be given ranging from basic research to drug development and vaccination approaches.

19:40 Close of Designing High-Performance Expression Platforms Conference

10TH ANNUAL | LISBON, PORTUGAL

HIGHLY PARALLEL PROTEIN DISCOVERY WORKFLOWS

Automation and Integration for Scalable Protein Production

THURSDAY 19 NOVEMBER

8:00 Registration and Morning Coffee

PROTEIN PRODUCTION & CHARACTERISATION WORKFLOWS

8:25 Chairperson's Remarks

Magdalena Richter, PhD, Associate Principal Scientist, AstraZeneca

8:30 Advanced Bioanalytics for Comprehensive Characterisation of Biotherapeutics Manufacturing

Sofia B. Carvalho, PhD, Principal Scientist, Animal Cell Technology, Instituto de Biologia Experimental Tecnologica (iBET)

We will discuss how high-resolution MS-based approaches, namely Multiple Attribute Method (MAM), together with mass photometry, capillary electrophoresis, and biophysical tools, provide powerful capabilities for the characterisation of mAbs and other complex format biotherapeutics. Building on these tools, we expanded our analytical portfolio to support rAAVs characterisation, enabling deeper assessment of viral protein ratios, key PTMs (e.g., glycosylation, oxidation, deamidation), and HCPs in both purified and in-process samples.

9:00 Next-Generation Protein Characterisation: An Integrated Mass Spectrometry Strategy from Structured Proteins to Intrinsically Disordered Proteins

Magdalena Richter, PhD, Associate Principal Scientist, AstraZeneca

Delivering screening-ready protein for difficult targets requires moving beyond empirical construct design toward data-driven decision-making. Our integrated MS platform—HDX-MS, Native MS, and intact/peptide mapping—enables precisely this, compressing timelines and de-risking production of challenging targets. A transcription factor case study demonstrates the approach in action, while our emerging fast HDX capability signals a new frontier: detecting transient druggable conformations within intrinsically disordered proteins.

9:30 Automating High-Throughput Purification: Accelerating Antibody, Protein Therapeutics Discovery

Yas Heidari, PhD, Global Product Manager, Marketing, Biotage AB

This presentation addresses purification as a critical bottleneck in antibody and protein therapeutics discovery, where manual workflows constrain throughput, increase hands-on time, and introduce variability. It highlights Biotage's PhyTip technology and PhyPrep platform as automated solutions for protein and plasmid purification that improve speed, consistency, and scalability. Using miniaturised chromatography in a 96-tip format, PhyTip enables rapid, high-recovery purification with low elution volumes and seamless integration with established automation platforms. The presentation also shows how PhyPrep supports large-scale plasmid purification by delivering high-purity, transfection-grade DNA with substantially reduced manual effort. Together, these technologies demonstrate how automation can remove purification bottlenecks, improve reproducibility, and accelerate candidate selection in therapeutic discovery.

9:45 Accelerating mAb and Bispecific Development: Integrating Platform Production and Early Product Quality Assessment

Myriam Adam, KBI Biopharma

Accelerating antibody development requires efficient production strategies combined with early assessment of product quality and developability. This work presents an integrated workflow combining platform-based production of monoclonal antibodies (mAbs) and bispecific antibodies (bsAbs) with early analytical characterization. Key attributes, including expression yield, purity, aggregation, and molecular integrity, are assessed to support candidate comparison and identification of potential developability risks. For bispecific antibodies, additional attention is given to correct assembly and chain pairing. By integrating production and quality assessment at an early stage, this approach supports informed candidate selection, reduces downstream development risks, and accelerates progression toward subsequent development stages.

10:00 Coffee Break in the Exhibit Hall with Poster Viewing

HIGH-THROUGHPUT SCREENING WORKFLOWS

10:45 High-Throughput Thermolysin Resistance Screening for Kinetic Stability Profiling

James Bowman, PhD, CTO, AI Proteins

Protein conformational stability influences the developability, pharmacokinetics, and efficacy of biological drugs. Conventional methods such as differential scanning fluorimetry and circular dichroism often miss transient local unfolding events linked to aggregation, proteolytic susceptibility, and rapid clearance. Here, we describe a high-throughput, automated thermolysin-based assay for kinetic stability profiling of proteins that captures dynamic conformational instability using minimal sample quantities, enabling rapid prioritisation of stable candidates during drug development.

11:15 Miniaturisation-Driven Acceleration of Expression and Screening Workflows

Maurine Fleury, Bioproduction Manager, Production Platform, Affilogic

We present a miniaturised expression platform that boosts screening throughput without compromising yield. By reducing culture volumes from 200 mL to 4.2 mL, we increased capacity from tens to hundreds of clones per batch while maintaining g/L production. The workflow integrates expression, purification (including tag removal), and conjugation into an automated, high-throughput process, enabling

HIGHLY PARALLEL PROTEIN DISCOVERY WORKFLOWS

Automation and Integration for Scalable Protein Production

earlier developability assessment and scalable data generation to support advanced screening and predictive modelling.

11:45 Decoding mAb Expression in CHO Cells through High-Throughput Screening Strategies

Jesús Lavado García, PhD, Postdoctoral Researcher, Co-PI of Mammalian Cell and Bioprocess Engineering Group, Novo Nordisk Foundation Center for Biosustainability

Monoclonal antibody productivity in CHO cells depends on both sequence design and balanced chain expression. High-throughput screening combined with design-of-experiments enables rapid identification of optimal construct features such as codon usage, signal peptides, kappa/lambda choice, and LC:HC promoter ratios. These strategies accelerate selection of high-yielding candidates, improving titre, cell viability, and predictability before stable cell line development.

12:15 LUNCHEON PRESENTATION: From Gene to Grid in Four Days: A Cell-Free Route to GPCR Cryo-EM nuclera

Audrey Dubourg, Product Manager, Nuclera

GPCR structural studies are slowed by unstable protein. eProtein Discovery™ screens up to 88 construct–condition combinations, while detergent-free cell-free synthesis inserts receptors directly into lipid nanodiscs. Supported workflows yield purified protein in 48 hours. New results include a 3.38 Å cryo-EM structure, four days from gene assembly to grid vitrification, and unliganded preparations of 12 additional GPCRs across Classes A–C, including six orphan receptors.

12:45 Luncheon in the Exhibit Hall with last Chance for Poster Viewing

PARALLEL DATA-DRIVEN BIOLOGICS WORKFLOWS

14:00 Chairperson's Remarks

Nicola Burgess-Brown, PhD, Professorial Research Fellow, UCL, London; COO, Protein Sciences, Structural Genomics Consortium

14:05 Considerations for Integrating Workflows for Protein Production and Characterisation to Enable Quality Data Generation for Building ML Models

Christopher Cooper, DPhil, Senior Lecturer in Biotechnology, University of Surrey

Integrated workflows for protein production and characterisation can generate high-quality datasets for machine learning. We outline practical frameworks for minimal yet sufficient data capture across the full pipeline, highlighting the value of negative data. Emphasis is placed on practical approaches to link and record design, expression, purification, and characterisation during protein production, and on implementing these approaches in both academia and industry while balancing data quality with resource constraints.

14:35 From BacMam to Breakthrough: REMBAC for Tunable Expression and Stable Cell Line Engineering

Manuel Reithofer, PhD, Department of Biotechnology and Food Science, Institute of Molecular Biotechnology, BOKU University

The Baculovirus-based BacMam system has recently regained attention through major therapeutic advancements. The production of complex bio-nanoparticles demands large transgenes and tunable expression, reviving this powerful platform. This presentation will highlight transient applications, recent progress, and introduce our newly developed REM-BAC system for rapid, efficient, and manifold baculovirus-mediated generation of stable mammalian cell lines via viral-footprint-free and site-specific genome integration.

15:05 From AI-Driven Discovery to Developability: Enabling Highly Parallel Purification Workflows for Next-Generation Antibodies GenScript

Xiaoyi Shi, PhD, Global Product Manager, Marketing, GenScript

Advances in AI and machine learning are transforming protein and antibody discovery by expanding candidate scale and diversity, but rapid purification and characterization remain critical to translate predictions into data. This presentation will show how high-throughput purification bridges discovery and developability, with GenScript case studies on parallel processing of large panels, robust workflows across formats, and affinity solutions that accelerate timelines and improve screening efficiency.

15:20 Redefining High-Throughput Transient Gene Expression - CHO4Tx EZ: A Preculture-Free Transfection Platform for CHO Cells ExcellGene

Paco Pino, PhD, Vice President, Research & Development, ExcellGene SA

Viral evolution itself can be used as an input for rational antigen design, rather than simply being considered a challenge.
CHO cells provide a robust and scalable manufacturing platform for recombinant protein-based antiviral vaccines.
The platform offers a well-established safety profile and a reliable route towards vaccine manufacturing.

10TH ANNUAL | LISBON, PORTUGAL

HIGHLY PARALLEL PROTEIN DISCOVERY WORKFLOWS

Automation and Integration for Scalable Protein Production

15:35 An Integrated End-to-End Workflow for the Production of Drug-Like Multispecific Therapeutic Antibodies

Thierry Monney, PhD, Associate Director, Antibody Engineering & Biophysics, Ichnos Glenmark Innovation IGI

The successful development of multispecific immune cell engaging-antibodies requires multifactorial screening of binding arm combinations, epitope pairing, and architectures. This approach is enabled by highly parallel protein and cell sciences workflow setups. In this presentation, we will cover our key capabilities to streamline multispecific antibody engineering and increase the likelihood of identifying potent, manufacturable immune cell engagers suitable for downstream development.

16:05 Production, Purification, and Testing the Functionality of Therapeutic IgA Antibodies

Ella Thornton, PhD, Research Scientist, R&D, Epsilogen Ltd.

We are pioneering the use of IgE and IgA as therapeutic options in oncology. This talk will focus on our work advancing the engineering, production, purification and functionality screening of therapeutic IgA, covering the optimisation of high-throughput workflows to large scale production of high purity IgA product. Alongside natural and modified IgA molecules, we also engineer and produce more complex IgA fusion molecules, which will be covered in this talk.

16:35 From Discovery to Manufacturing: Enabling Predictive Bioprocessing for Scalable Biologics

Matthias Müllner, PhD, CEO & Co-Founder, Bespark Bio GmbH

A persistent challenge in biologics development is bridging early discovery with scalable manufacturing. Using a viral vector case study, this presentation illustrates how empirical process development evolved into a more predictive workflow integrating targeted experimentation, process modelling, and digital twins. By combining structured development approaches with data-driven tools, experimental burden can be reduced while improving process understanding, scalability, and decision-making, highlighting how predictive bioprocessing supports parallel and efficient discovery-to-manufacturing workflows.

17:05 PANEL DISCUSSION: Higher-Throughput Biopharmaceutical Workflow Challenges

Moderator: Christopher Cooper, DPhil, Senior Lecturer in Biotechnology, University of Surrey

Protein expression/production laboratories provide crucial support to drug discovery efforts. This panel discussion focuses on the concepts, technologies, and strategies necessary to meet the ever-increasing need for recombinant proteins.

Topics for Discussion:

- Strategies on how to manage multiple “top priority” projects
- How, why, and when to automate?
- How to incorporate both method/tech development into workflows?
- How do we incorporate AI into production workflows?

Panelists:

Nicola Burgess-Brown, PhD, Professorial Research Fellow, UCL, London; COO, Protein Sciences, Structural Genomics Consortium

Dominic Esposito, PhD, Senior Director, Protein Sciences, Septerna

Andreia Verissimo, PhD, Senior Scientist, Late Stage R&D, Instituto de Biologia Experimental e Tecnológica (iBET)

Bjørn Voldborg, MSc, Head, National Biologics Facility, DTU Bioengineering, Technical University of Denmark

17:45 Close of Summit

Training SEMINARS
By Cambridge Healthtech Institute

AI-DRIVEN DESIGN OF BIOLOGICS: A HANDS-ON GUIDE TO USING STATE-OF-THE-ART ML PROTEIN MODELS



INSTRUCTOR:

David P. Nannemann, PhD
Vice President, Rosetta Commons Foundation

David is an expert in protein engineering and computational design, with extensive experience applying AI-driven modeling tools in an industry setting. He serves as Vice President of the Rosetta Commons Foundation and Industry Chair on the Rosetta Commons board, helping bridge academic advancements with industry applications. As Managing Member of Rosetta Design Group, he collaborates with companies of all sizes to tackle complex challenges in biologics design. David's deep expertise in leveraging cutting-edge tools like Rosetta, AlphaFold, and diffusion-based models for protein design make him an invaluable guide for participants looking to apply AI-driven biologics design in real-world settings.

Since 2021, artificial intelligence models have revolutionized AI-driven biologics development, enabling breakthroughs in structure prediction, sequence design, and protein engineering. This course equips researchers and professionals with the expertise to leverage cutting-edge tools for structure prediction (AlphaFold, ImmuneBuilder), protein engineering with protein language models (ESM, AntiBERTy) and structure-based design (ProteinMPNN and RFDiffusion). Through a blend of lectures and hands-on exercises, participants will learn best practices for tool selection, method optimisation, and design selection. By exploring real-world applications and emerging techniques, such as BindCraft and RFAntibody, attendees will gain a practical understanding of performance capabilities, limitations, and effective workflows.

TOPICS TO BE COVERED:

- Building practical experience with AI-based modelling of proteins
- A breakdown of input formats, command lines, and analysis of output
- Hands-on exercises using real-world scenarios in antibody structure prediction, developability pre-screening, immunogen solubilization, and *de novo* binder design
- Discussion of, and guidance on, questions like: how many models, *in silico* selection metrics and ranking, and how many to test in the lab
- Pipelining of protein design software and the critical use of an "oracle"

5TH ANNUAL | LISBON, PORTUGAL

MACHINE LEARNING FOR PROTEIN ENGINEERING PART 1

Advancing Protein Engineering with AI: New Architectures, Validation Strategies, and Complex Biologics

WEDNESDAY 18 NOVEMBER

7:30 Registration and Morning Coffee

ADVANCING MINI BINDERS TO THE CLINIC

8:25 Chairperson's Remarks

Roberto Spreafico, PhD, Senior Director, Biologics AI Innovation, AstraZeneca

8:30 Programmable Molecule Design with Discrete Generative Models

Pranam Chatterjee, PhD, Assistant Professor, Bioengineering and Computer Science, University of Pennsylvania

We develop generative models to design peptides from sequence. Our work has centred on language models that design peptides to bind and modulate undruggable targets. More recently, we've developed discrete diffusion models, including PepTune and TR2-D2, to generate peptide binders optimised across ADMET properties. Finally, newer discrete flow matching models, including moPPIt and SOAPIA, refine *specific* binders under competing objectives, with extensions to peptide-drug conjugates, conformational control, and cell-state perturbation.

9:00 *De novo* Antibody Design at Genmab: Learnings, Challenges and Opportunities

Samuel Demharter, PhD, Head, Discovery Data Science, Genmab

In 2022 Genmab made *de novo* antibody design a strategic priority, betting that data was the real bottleneck. We generated hundreds of thousands of calibrated antibody–antigen affinity measurements. I will share what that data taught us, where a simple model beats a complex one, and why we are now adapting open-source models rather than building our own. If binder design is becoming a commodity, where does the next frontier lie?



9:30 KEYNOTE PRESENTATION: Disulphide and Sequence-Encoded Conformational Priors Guide Nanobody Structure Prediction

Pietro Sormanni, PhD, Associate Professor & Royal Society University Research Fellow, Chemical Engineering, Imperial College London

Accurate nanobody structure prediction requires capturing both the HCDR3 loop's conformational blueprint (kinked vs. extended) and non-canonical disulphide bonds—features standard RMSD-optimised predictors frequently miss. We have developed NbForge, a lightweight folding model with blueprint- and disulphide-aware inductive biases that matches large state-of-the-art predictors on coordinate accuracy while running at sub-second speed. NbForge also improves nanobody-antigen complex prediction when used as a structural template, motivating blueprint- and disulphide-aware benchmarks beyond RMSD.

10:00 Developability-Aware Humanization of Nanobodies Using Region-Specific Diffusion

ENPICOM

Ishaan Bhat, PhD, Lead Machine Learning Scientist, ENPICOM

Humanizing VHHs risks overwriting the FR2 hallmark residues that let them work without a light chain. In this session, we show how region-specific diffusion solves this by design. An ensemble of discrete diffusion models edits only the framework, leaving CDRs, hallmarks and cysteines untouched, and staged developability, CDR3-conformation and humanness filters turn the output into a diverse, expression-ready shortlist.

10:30 Coffee Break in the Exhibit Hall with Poster Viewing

AI DESIGN FOR COMPLEX BIOLOGICS

11:15 AI-First *de novo* Design of Antibodies

Roberto Spreafico, PhD, Senior Director, Biologics AI Innovation, AstraZeneca

In silico de novo antibody design powered by AI has the potential to transform biologics discovery by complementing traditional screening with rational engineering. We have developed models that consistently deliver robust hit rates, actionable binding-affinity distributions, and favorable developability profiles across a diverse range of targets, achieving state-of-the-art performance. Together, these capabilities enable a more predictable, efficient, and scalable path from target selection to optimized antibody candidates.

11:45 Multibodies: AI-Based Engineering of Dual-Specific IgGs

Michael Peer, PhD, Director of Computational Biology, Biolojic Design, Ltd.

Bispecific antibodies are advancing in clinical practice, but their multi-unit formats create challenges in half-life developability and manufacturing. Multibodies (two-in-one antibodies)—native IgGs that can bind two different antigens—can solve these challenges. We have developed a robust AI-based multibody engineering platform and have used it across multiple campaigns. We will discuss our technology, results, and demonstrate two IND-submitted examples where multibodies surpass the efficacy of clinical benchmarks.

5TH ANNUAL | LISBON, PORTUGAL

MACHINE LEARNING FOR PROTEIN ENGINEERING PART 1

Advancing Protein Engineering with AI: New Architectures, Validation Strategies, and Complex Biologics

12:15 LUNCHEON PRESENTATION: Every Datapoint in Every Decision: A Bio-Native, End-to-End Workflow for Multi-Feature Bispecific Design

MindWalk

Shuji Sato, Vice President, Innovative Solutions, Business Development, MindWalk Corp.

Bispecific antibody development programs require stitching together workflows and merging datasets from multiple sources. Reducing that complexity depends on tight integration of *in silico* and wet lab capabilities, with computation grounded in real biological data rather than layered on top of it. We demonstrate an efficient process that begins with *in vivo* discovery of VHH and mAbs as highly developable building blocks, which feed into *in silico* engineering, combinatorially suitable bispecific construct design, and reasoning over the whole program with a focus on functionality and developability of the final molecule.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

BENCHMARKING ML MODELS

14:00 Chairperson's Remarks

Natasha Murakowska, PhD, Director, Applied Data Science, A-Alpha Bio

14:05 Validation and Analysis of 12,000 AI-Driven CAR T Designs in the Bits-to-Binders Competition

Clay Kosonocky, Researcher, Molecular Biosciences, University of Texas at Austin

In Bits to Binders, a competition benchmarking *de novo* binder design in the context of chimeric antigen receptor (CAR) T cells, teams from 42 countries submitted 12,000 designs of 80-amino acid binders targeting human CD20 as CAR binding domains. Designs were screened by pooled CAR-T proliferation and the top-performing candidates were validated across several T cell functional assays. From this data we identified sequence and methodological factors leading to success.

14:35 Large-Scale Benchmarking of Generative Models for *de novo* Antibody Design

Natasha Murakowska, PhD, Director, Applied Data Science, A-Alpha Bio

Despite rapid progress in generative protein design, rigorous independent evaluation across models remains largely unaddressed. We present a prospective benchmarking framework for VHH *de novo* design, leveraging AlphaSeq for high-throughput quantitative binding measurement. Designs are evaluated across a stratified target panel of varying difficulty, scored on hit rate, affinity distribution, specificity, and diversity to assess model generalisation. We discuss longitudinal tracking and the value of experimental feedback for model improvement.

15:05 Generative AI for Biologics: Scalable, Robust, and Lab-Validated

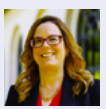
Cradle

Lena Erlach, Scientific Solutions Consultant, Cradle

Generative AI promises faster and better biologics, but real-world impact depends on robust generalization and on outcomes confirmed *in vitro*. We show how Cradle's platform enables scientists to apply generative AI to multi-property lead optimization and how we validate our ML research through in-house wet-lab testing and data generation. We discuss what it takes to make generative models scalable, robust and lab-validated.

15:35 Transition to Keynote session

PLENARY KEYNOTE SESSION



15:45 Chairperson's Remarks

Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC



15:50 The Making of Multispecific Antibodies—A Clinical Perspective

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

- How has the field of multispecific antibodies evolved in recent years?
- What are the modes of action utilised by multispecific antibodies?
- What are the frequently used targets and target combinations?
- What are the emerging applications?



16:00 The Future of T Cell Engagers

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

- TCE approvals are catching up with ADC approvals
- Compelling single-agent activity in blood-borne and solid tumor indications
- Diverse formats and targets work for TCEs
- Several ways to augment the efficacy and safety of TCEs: hundred percent response rates at reach
- Treatment of minimal residual disease and target combinations
- Recent highlights pointing at the future of TCEs

5TH ANNUAL | LISBON, PORTUGAL

MACHINE LEARNING FOR PROTEIN ENGINEERING PART 1

Advancing Protein Engineering with AI: New Architectures, Validation Strategies, and Complex Biologics

16:10 FIRESIDE CHAT: Emerging Modalities and the Future of Antibody Engineering






Moderator: Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

- Bispecific antibodies and T cell engagers
- Design principles
- Complex formats: Trispecifics and costimulation
- Bispecifics compared to ADCs or CAR-T
- Next frontiers beyond cancer

Panelists:

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

Ulrike Philippar, PhD, Vice President Oncology, Global Head of Discovery, Johnson & Johnson Innovative Medicine

16:50 Refreshment Break in the Exhibit Hall with Poster Viewing

YOUNG SCIENTIST MEET-UP

IN-PERSON ONLY: Young Scientist Meet Up

Raphaelle Drean, PhD, Project Manager, Scientist, R&D, Affilogic

Iris Goldman, Conference Producer, Cambridge Innovation Institute

Leire Oyon, Research Scientist, Protein Crystallography Unit, Navarrabiomed

Isabel Waibel, Graduate Student, Biochemical Engineering, ETH Zurich

The young scientist meet-up is an opportunity for scientists entering the field to develop connections across institutions, and for established leaders to come build relationships with the next generation of scientists. The meet-up will pave the way for mentorships, professional opportunities, and scientific discovery.

- Get to know fellow peers and colleagues
- Make connections and network with other institutions

17:30 Lessons Learned from Lab-in-the-Loop Strategies for Multi-Parameter Optimisation

Dov Gertz, Co-Founder & CEO, Converge Bio Inc.

Generative antibody design is only as useful as the experimental loop surrounding it. We share lessons from Converge Bio's generative AI platform for multi-parameter antibody design and optimization. AI-generated candidates are tested with Twist Bioscience for binding and developability in under five weeks, enabling rapid iteration and convergence toward a desired target product profile.

INTELLECTUAL PROPERTY AND COLLABORATIVE DATA

18:00 The Future of Antibody Patenting: How Do AI, Court Decisions, and New Paratope Mapping Technologies Affect Patenting Strategies?

Ulrich Storz, PhD, Senior Partner, Michalski-Hüttermann & Partner

Antibody development has undergone tremendous advancements over the last decade. Artificial intelligence, paratope mapping, and epitope analysis offer exciting new prospects, but may also affect strategies to protect the respective antibodies. For example, does the 'structural non-obviousness principle' still hold when antibody sequences would be predictable by artificial intelligence? Furthermore, the case law regarding the patentability of antibody-related inventions is in constant flux. This presentation provides an overview and outlook.

18:30 The Importance of Federated Networks for Antibody AI Applications

Robin Roehm, PhD, CEO & Co-Founder, Apheris

Antibody AI models often fail to generalise to novel sequences and underrepresented regions of sequence space. This reflects insufficient training data diversity and coverage, even as dataset sizes grow. This talk examines how federated data networks, including the AI Structural Biology Network with nine pharma partners and the Antibody Developability Network, improve model robustness and applicability across proprietary datasets, with examples in developability assessment, antibody–antigen co-folding, and binding affinity prediction.

19:00 OpenFold3 Update and New Training Data for Reproducible Biomolecular AI

Peter Clark, PhD, Vice President, Computational Drug Design, Novo Inc.

OpenFold3 is an open-source, Apache 2.0-licensed biomolecular co-folding platform—open code, open weights, open training data—built as a fully transparent alternative to closed systems. This talk covers recent progress: co-folding and affinity prediction, expanded benchmarks (RnP, Ab/Ag), and the OF3 Portal for training-data exploration. Full-stack openness enables reproducible biomolecular AI and a community development flywheel that we use to drive innovation.

19:30 Close of Machine Learning for Protein Engineering Part 1 Conference

5TH ANNUAL | LISBON, PORTUGAL

MACHINE LEARNING FOR PROTEIN ENGINEERING PART 2

Demonstrating Value and Putting Theory into Practice

THURSDAY 19 NOVEMBER

8:00 Registration and Morning Coffee

KEYNOTE PRESENTATION

8:25 Chairperson's Remarks

Victor Greiff, PhD, Professor, University of Oslo; CTO, IMPRINT



8:30 KEYNOTE PRESENTATION: Data and Baselines in AI for Antibody Design

Charlotte M. Deane, PhD, Professor, Structural Bioinformatics, Statistics, University of Oxford; Executive Chair, Engineering and Physical Sciences Research Council (EPSRC)

I will describe some of the novel computational tools and databases we are pioneering in biotherapeutics and show some of the ways we can better test the methods and offer up a few ways we can build methods that should generate more robust results.

9:00 KEYNOTE FIRESIDE CHAT: GENERATION OF AI-BASED THERAPEUTICS

Moderator: Andrew Buchanan, PhD, FRSC, Head of Discovery, Stealth Mode Biotech

- Bridging the data gap
- Capturing conformational reality
- Choosing the right tool for the right job

Panelists:

Charlotte M. Deane, PhD, Professor, Structural Bioinformatics, Statistics, University of Oxford; Executive Chair, Engineering and Physical Sciences Research Council (EPSRC)

Simon Kohl, PhD, Founder and CEO, Latent Labs

Jinwoo Leem, DPhil, Senior Machine Learning Research Scientist, Isomorphic Labs

Talip Uçar, TechBio Entrepreneur; ex-Boltz, AstraZeneca & NVIDIA

9:30 Far from Equilibrium: Predicting Drug Product Risk in Early Discovery

ΛPOHΛ

Shamit Shrivastava, Co-Founder & CEO, Apoha

Machine learning is changing antibody design, but a model can only learn the physics in the training data. Developability data is measured dilute, at rest, but drug products fail at high concentration under stress, through aggregation, gelation or viscosity. Liquid State Intelligence drives micrograms of antibodies through a pinch-off singularity and records how they behave. It yields reproducible axes of behaviour that panels miss, an early measure of risk, and a new kind of data for AI models.

9:45 Lead optimization: Finding the best candidate using a multi-model approach

Converge

Shachar Barak, Antibody Engineering Team Lead, Antibody Engineering, Converge Bio Inc

How to combine a generator with expert model screening

10:00 Coffee Break in the Exhibit Hall with Poster Viewing

DE NOVO DESIGN OF PROTEIN THERAPEUTICS: Where Technology Advances Meet Real-World Applications

10:44 Chairperson's Remarks

Norbert Furtmann, PhD, Head, Biologics AI & Design, Computational and AI Strategy, Sanofi

10:45 The Proteina Model Family: From Fundamental Generative AI to Frontier Protein Design

Karsten Kreis, PhD, Principal Research Scientist, NVIDIA Research

Generative AI advanced first in images and language, then reached biology. We trace that path through the Proteina model family: scalable transformers and flow matching (Proteina), latent representations (La-Proteina), inference-time search (Proteina-Complexa) and reasoning (RFD4-Proteina). Experimental validation spans more than a million designs against 125 targets, picomolar binders, *de novo* enzymes and the first *de novo* binders for a free carbohydrate. We close with reinforcement–learning post-training.

11:05 *De novo* VHH Design in Practice: Bridging AI Innovation with Real-World Biologics Design

Norbert Furtmann, PhD, Head, Biologics AI & Design, Computational and AI Strategy, Sanofi

This presentation will provide a pharma industry perspective on translating *de novo* protein design from computational promise to therapeutic reality. We will showcase Sanofi's integrated approach to VHH discovery, featuring our computational *de novo* design toolbox and its seamless integration with specialized wet-lab workflows.

5TH ANNUAL | LISBON, PORTUGAL

MACHINE LEARNING FOR PROTEIN ENGINEERING PART 2

Demonstrating Value and Putting Theory into Practice

11:25 Efficient Generation of Epitope-Targeted *de novo* Antibodies with Germinal

Claudia Driscoll, PhD, Postdoctoral Fellow, Generative Biology Institute, Ellison Institute of Technology

Obtaining novel antibodies against specific protein targets is experimentally laborious. We introduce Germinal, a generative pipeline that designs functional antibodies against specific epitopes while requiring minimal experimental screening (tens of designs per antigen). Our method integrates AlphaFold-Multimer with an antibody-specific language model for *de novo* CDR design. Across four diverse targets and formats, Germinal successfully generated antibodies with high novelty and robust mammalian expression

11:45 AI for Biologics: Transition from Discovery to Design

Yu Qiu, PhD, Executive Director, Biologics Design and Technology, AstraZeneca

This presentation will detail AstraZeneca's journey in leveraging machine learning for protein therapeutics. I will discuss our progress and methodology transitioning from CDR design, developability prediction, active learning for lead optimisation, and mini-protein design to our current advancements in *de novo* antibody design.

12:05 Session Break

12:15 LUNCHEON PRESENTATION: Pythia-1: Directed Design of Developable Human IgGs — from Soluble Targets to GPCR Agonism PYTHIA

Peter Bowers, PhD, Head of Research, Pythia Labs

Pythia-1 enables the directed design of full-length human IgGs against soluble and membrane targets using specified structures and epitopes. Screening no more than 48 designs per target yields antibodies with low-nanomolar affinity, favorable developability profiles, and potent cellular activity, including both GPCR antagonism and agonism. This talk will highlight the ability to program antibody function through structure-guided design and discuss progress toward advancing these antibody panels into drug candidates supported by *in vivo* data.

12:45 Luncheon in the Exhibit Hall with Last Chance for Poster Viewing

FROM STRUCTURE PREDICTION TO *DE NOVO* VACCINE DESIGN

14:00 Chairperson's Remarks

Monica L. Fernandez-Quintero, PhD, Associate Professor, Department of Microbiology and Immunology, Novo Nordisk Foundation Initiative for Vaccines and Immunity (NIVI)

14:05 Structural Plausibility without Binding Specificity: Limits of AI-Based Antibody-Antigen Structure Prediction Confidence Scores

Eva Smorodina, PhD, Computational Structural Biologist, University of Oslo

We present a controlled framework for evaluating binding specificity using 106 experimental nanobody-antigen complexes and 11130 shuffled non-cognate pairings. Benchmarking AlphaFold3, Boltz-2, and Chai-1 showed that although predicted complexes were often geometrically plausible, internal confidence scores (e.g., ip) failed to distinguish correct from incorrect pairings, and increased sampling improved refinement but not discrimination. We therefore conclude that confidence scores require validation against realistic decoys and release 1.8 million AI-generated complexes.

14:35 Directed Evolution Informs Divergent Pathways of Antibody Affinity Maturation

Daniel Bader, Graduate Student, Scripps Research Institute

Directed evolution provides a powerful framework to study and engineer antibody affinity maturation *in vitro*, thereby informing rational boost immunogen design to steer *in vivo* evolution toward optimal neutralising activity. Dissecting closely-related HIV bnAb lineages, we show that minor structural variations, such as differences in LCDR3 loop length, direct distinct evolutionary pathways and determine the optimal amino acid configurations for epitope recognition.

15:05 Accelerating Biologics Discovery with Closed-Loop Agentic AI and Wet-Lab Execution Alloy Therapeutics

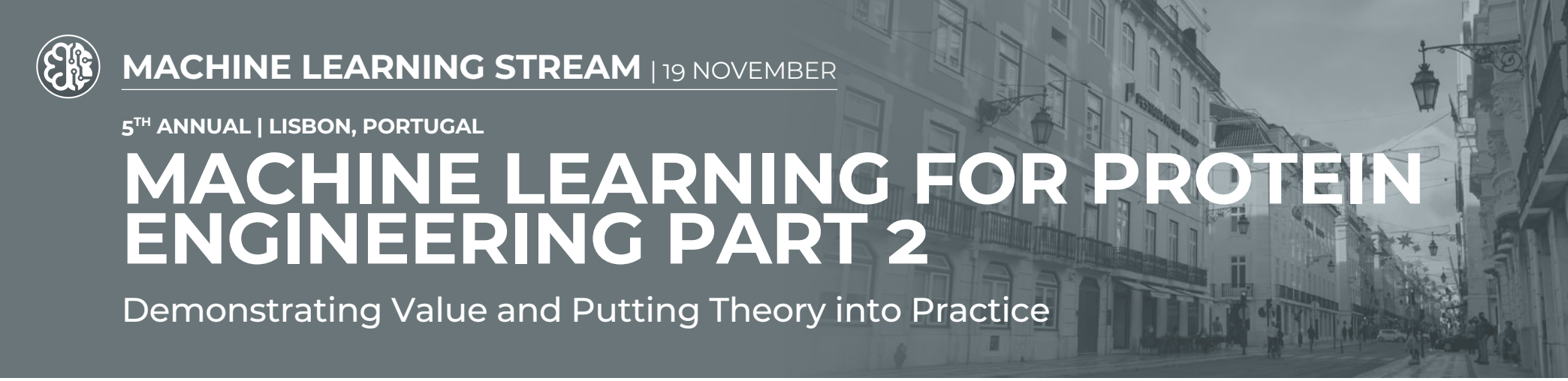
Cedric Weber, PhD, Chief Scientific Officer, Data Science & Bioinformatics, Alloy Therapeutics, Inc.

As frontier AI models become more accessible, biologics discovery differentiation depends on proprietary data, specialized tools, integrated workflows, and wet-lab validation. Alloy's agentic platform connects these capabilities, enabling AI agents to analyze assay data, identify validated binders, flag developability risks, and optimize affinity and developability. Experimental feedback informs scientist-in-the-loop decisions, creating a closed-loop make–test–learn system to accelerate discovery and improve candidate quality.

INTERACTIVE DISCUSSIONS

15:35 Find Your Table and Meet Your Moderator

Interactive Breakout Discussions are informal, moderated discussions, allowing participants to exchange ideas and experiences and develop future collaborations around a focused topic. Each discussion will be led by a facilitator who keeps the discussion on track and the group engaged. To get the most out of this format, please come prepared to share examples from your work, be a part of a



5TH ANNUAL | LISBON, PORTUGAL

MACHINE LEARNING FOR PROTEIN ENGINEERING PART 2

Demonstrating Value and Putting Theory into Practice

collective, problem-solving session, and participate in active idea sharing. Please visit the Interactive Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

TABLE 1: Appropriate Use of Agentic AI in the Lab

M. Frank Erasmus, PhD, Head, Bioinformatics, Specifica, an IQVIA business

Monica L. Fernandez-Quintero, PhD, Associate Professor, Department of Microbiology and Immunology, Novo Nordisk Foundation Initiative for Vaccines and Immunity (NIVI)

- Where can agentic AI meaningfully accelerate research?
- How should and can AI-generated outputs be verified, and what level of human intervention is required?
- How do we protect unpublished data, ensure reproducibility, and maintain scientific standards?
- What tools, workflows, training, and policies are needed for responsible incorporation in academic environments?
- How does increasing autonomous AI systems change the way research is conducted, and where should we step in?

TABLE 2: An AI-Powered Biofoundry for Protein Discovery and Engineering

Huimin Zhao, PhD, Steven L. Miller Chair Professor, University of Illinois Urbana Champaign

- AI-powered protein discovery and engineering
- Infrastructure and interoperability
- Economic impact and industrial adoption
- Workforce and collaboration models

AGENTIC AI AND SELF-DRIVING LABS FOR BIOLOGICS DISCOVERY

16:14 Chairperson's Remarks

M. Frank Erasmus, PhD, Head, Bioinformatics, Specifica, an IQVIA business

16:15 An AI-Powered Biofoundry for Protein Discovery and Engineering

Huimin Zhao, PhD, Steven L. Miller Chair Professor, University of Illinois Urbana Champaign

Proteins have promised to solve many grand challenges of modern society. However, the existing processes for discovery, characterisation, and engineering of proteins are slow, expensive, and inconsistent. To address this limitation, my lab has been developing an AI-powered biofoundry since 2013. In this presentation, I will highlight a few representative accomplishments. In addition, I will discuss our efforts in making our AI-powered biofoundries accessible to the broader research community.

16:45 Integrating Physics & Deep Learning for Antibody Design

Joost Schymkowitz, PhD, Professor & Group Leader, Switch Lab, VIB-KU Leuven

While deep learning has transformed protein design, purely data-driven methods struggle to generalise novel targets and lack physical grounding. We present a computational pipeline that integrates a physics-based force field with evolutionary sequence optimisation for *de novo* antibody design. Our approach jointly optimises binding affinity, stability, and developability. Benchmarks demonstrate that physics-informed methods match state-of-the-art ML approaches on antibody binding prediction while offering interpretability without target-specific training data.

17:15 Effects of Protein Interface Mutations on Protein Quality and Affinity

Victor Greiff, PhD, Professor, University of Oslo; CTO, IMPRINT

Antibody–Antigen affinity measurements often conflate protein interaction with folding, stability, and expression. Using deep mutational scanning across four VHH-antigen complexes, we introduce control binders to disentangle these effects for single and double mutations in both partners. Benchmarking structure- and sequence-based models reveals that predictive performance largely reflects protein quality rather than intrinsic binding affinity, highlighting a critical confounder and the need for disentangled datasets to advance accurate affinity prediction models.

17:45 Close of Summit

4TH ANNUAL | LISBON, PORTUGAL

ANTIBODY-BASED THERAPIES

New Formats. New Modalities. New Therapeutic Reach.



TUESDAY 17 NOVEMBER

7:30 Registration and Morning Coffee

EMERGING MODALITIES FOR AUTOIMMUNE DISEASES

8:25 Chairperson's Remarks

Rocky Strollo, MD, PhD, Associate Professor, Endocrinology, San Raffaele University of Rome

8:30 A Novel Antibody Approach to Pan-Subclass IgG Reduction

Ibo Janssens, PhD, Senior Scientist, Preclinical Product Development, argenx BVBA

Ig-ABDEG is a first-in-class, Fc-silenced IgG sweeping antibody designed to achieve rapid, deep, and sustained pan-subclass IgG reduction while preserving a favorable safety profile. Ig-ABDEG enables efficient lysosomal clearance of all IgG subclasses without affecting other immunoglobulins, FcRn integrity, or albumin levels. This mechanistically differentiated approach supports chronic use in IgG mediated diseases, with a first-in-human study currently ongoing.

9:00 Fc-Engineered Anti-PD-1 for Selective Depletion of Pathogenic T Cells in Autoimmunity

Alexander Rau, PhD, Senior Scientist, Protein Engineering, Anaveon AG

ANV200 was developed as Fc-engineered antibody with optimised FcγRIIIa and FcγRIIb engagement. In PBMC and whole-blood assays, ANV200 induced deeper depletion of activated PD-1⁺ T cells than benchmark antibodies and shifted the T cell compartment toward naïve populations. In a xenogeneic GvHD model, ANV200 suppressed expansion of PD-1⁺ T cells, reduced disease progression, and provided complete protection from mortality, supporting ANV200's advancement into clinical development.



9:30 KEYNOTE PRESENTATION: Unlocking New Horizons: Anti-CD89 Antagonist Antibodies as Game-Changers in Treatment of IgA-Driven Autoimmune Disease

Marjolein van Egmond, PhD, Professor, Oncology and Inflammation, Surgery/Molecular Cell Biology and Immunology, Amsterdam UMC

Recent evidence shows that many autoimmune diseases involve IgA autoantibodies that drive pathology. Targeting the IgA Fc receptor (CD89) with anti-CD89 antibodies disrupts these harmful interactions, offering a novel therapeutic mechanism to alleviate symptoms and disease progression. This keynote will present the latest research, therapeutic potential, and clinical results of novel anti-CD89 monoclonal antibodies, highlighting their innovative role in managing IgA-mediated autoimmune disorders and transforming treatment strategies.

10:00 Novel Therapeutic Human VH Bispecific Protein & mRNA-LNP Applications Enabled by HCAb Harbour Mice®

Rene Hoet, Senior Scientific Advisor, Business Development, Nona Biosciences

- Human single heavy chain domain (HCAb) platform & full IgG (H2L2) platforms allow flexibility in design and number of binding modules to select optimal biological and developability properties for multispecifics with multiple molecules moved into clinical trials.
- A TransferinR1 (TrR1) specific human VH from Harbour mice enables improvement of therapeutic bispecific brain delivery.
- Bispecifics encoded human VH only mRNA liposomes show efficacy in preclinical *in vivo* ONC models.
- Conjugation of VH to mRNA encoded CAR constructs significantly improve the transfection efficacy of human T cells for *in vivo* CAR-T therapy.

10:15 Precision by Design: VHH Affinity, Specificity, and Site-Specific Conjugation for ADCs, AOCs, and LNPs

Lurdes Rodrigues-Duarte, Director, Research & Development , Isogenica Ltd.

Targeted delivery programs strongly rely on the quality of their targeting component. VHHs engineered with a C-terminal cysteine handle enable precise, site-specific conjugation across ADCs, AOCs, and LNPs without compromising yield or binding performance. Proof-of-concept ADC data, alongside affinity and specificity data, demonstrates what conjugation-ready VHH design looks like in practice and what it means for building targeted delivery programs on a single, versatile platform.

10:30 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing

NOVEL ANTIBODIES AND NEW THERAPEUTIC APPLICATIONS

11:15 Bispecific IgA to Enhance Neutrophil-Mediated Killing of Neuroblastoma Without Side Effects

Jeanette Leusen, PhD, Professor AntibodyTherapy, University Medical Center Utrecht

Two novel bispecific IgA molecules were designed to target GD2 and CD47 on neuroblastoma. Both formats effectively activated neutrophils, promoted uptake of neuroblastoma cells via trogocytosis, and induced neutrophil-mediated killing comparable to the combination of IgA3.0 and CD47 blockade in samples from healthy donors and patients. The bispecific containing a SIRPαD1-based CD47-targeting arm exhibited minimal off-tumor activity against GD2-negative cells, while achieving near-complete clearance of GD2-positive tumor cells *in vivo*.

4TH ANNUAL | LISBON, PORTUGAL

ANTIBODY-BASED THERAPIES

New Formats. New Modalities. New Therapeutic Reach.



11:45 Multibody Engineering for Next-Generation Therapeutic Applications

Yehezkel Sasson, PhD, Senior Vice President, Technology Development, Biolojic Design Ltd.

Multibodies introduce a new paradigm for multispecific biologics: a single Fab arm engineered to recognise two distinct antigens. By embedding multispecificity within a conventional IgG architecture, Multibodies enable new therapeutic designs while maintaining simplicity, manufacturability, and modularity. This presentation will introduce the technology, highlight BD200 as a case study of Multibody drug conjugates, and discuss how the platform creates new opportunities for ADCs, TCEs, masked antibodies, and other therapeutic modalities.

12:15 LUNCHEON PRESENTATION: The Diversity Paradox: What CD28 Reveals About Antibody Discovery Across Platforms

Tracey Mullen, Chief Strategy Officer, Mosaic Biosciences Inc

More discovery platforms should mean more antibody diversity. Right? We put that assumption to the test using CD28, interrogating the same target through hybridoma, single B-cell, immune and naïve display, and alpaca VHH discovery approaches. Rather than simply counting hits, we examined what each platform delivered across sequence diversity, epitope recognition, binding kinetics, and developability. The resulting dataset revealed some unexpected complexities and raised important questions about how we define diversity, evaluate discovery success, and select complementary technologies. What happens when you look beyond the hit count? The answer may change how you think about antibody discovery.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

BEYOND MABs: TARGETED PROTEIN DEGRADATION AND NOVEL MOAs

14:00 Chairperson's Remarks

Tomasz Sitar, PhD, Head, Drug Discovery, JJP Biologics

14:05 Beyond Inhibition: SureTAC for Precision Membrane Protein Removal

Revina Van Scherpenzeel, PhD, Principal Scientist, Laigo Bio

Membrane proteins and receptors drive diseases such as cancer and autoimmune disorders. Instead of blocking them, selective degradation—including of "undruggable" receptors—enables deeper and longer pathway inhibition. SureTAC (Surface Removal Targeting Chimeras) are bispecific antibodies that harness the endolysosomal system to degrade membrane proteins by recruiting E3 ligases, effectively removing targets from the cell surface *in vitro* and *in vivo*. Laigo Bio is advancing SureTAC across oncology, inflammation, and autoimmune diseases.

14:35 EpiTAC Bispecific Antibodies Degrade Oncogenic Targets to Solve Limitations of Current Clinical Therapeutics

Shyra J. Gardai, PhD, CSO, EpiBiologics

EpiBiologics EpiTAC bispecific antibodies degrade receptor tyrosine kinases (RTKs) independent of their form. Removal of the oncogenic RTK and associated scaffolding function is differentiated from blockade approaches. Tissue-selective EpiTACs degrade EGFR, cMET, and cKIT to drive deep, prolonged anti-tumour activity. EPI-326 is a novel tissue selective EGFR approach to address the limitations of current EGFR drugs. A Phase I study in patients with HNSCC and mutant EGFR NSCLC is ongoing.

15:05 POSTER HIGHLIGHT: Engineering Trop2-Targeted Degrader-Antibody Conjugates for Triple-Negative Breast Cancer: A Comparative Oncology Approach

Rafaela Marimon, Researcher, Antibody Engineering, University of Lisbon

Triple-negative breast cancer (TNBC) is an aggressive human breast cancer with limited targeted treatment options. We are developing Trop2-targeted degrader-antibody conjugates (DACs) that combine Trop2-specific single-domain antibodies with PROTACs targeting oncogenic proteins. Using human breast cancer and feline mammary carcinoma as complementary comparative oncology models, we will evaluate DAC activity, pharmacokinetics and safety *in vitro* and *in vivo*, advancing cross-species translation of targeted protein degradation.

15:20 POSTER HIGHLIGHT: CM101: A Cell-Penetrating VHH for Intracellular Immune Checkpoint Inhibition

Miriam Aarsund Larsen, PhD, CEO, Cellmover

Intracellular immune checkpoints represent an untapped therapeutic opportunity. While current immune checkpoint inhibitors target extracellular receptor–ligand interactions, inhibitory signaling is mediated intracellularly. Cellmover is developing CM101, a cell-penetrating VHH designed to block intracellular immune-checkpoint signaling, overcome T-cell suppression, and restore T-cell activity in immunosuppressive tumor environments, offering a novel approach to cancer immunotherapy.

15:35 Speed Without Compromise –Tailored CHO.RiGHT® Cell Line Development for Any Antibody Format

Anneliese Krueger, Scientist, Pharmaceutical Cell Line Development, ProBioGen AG

ProBioGen established a fully optimized workflow that enables the rapid development of stable, high-yielding CHO cell lines, even for structurally complex antibodies. The DirectedLuck® transposase ensures a stable and robust clone pool expression .This is achieved by advanced epigenetic targeting to the most active genomic sites. Complementary to this highly efficient gene delivery, our flexible, automated clone screening robotic system PSi.Bot and early high-throughput product analytics enable real-time decision-making and the early identification of high-performing clones. This combined approach sets new benchmarks for speed, scalability, and reliability in therapeutic protein development.

4TH ANNUAL | LISBON, PORTUGAL

ANTIBODY-BASED THERAPIES

New Formats. New Modalities. New Therapeutic Reach.



It demonstrates that even the most complex biologics can be efficiently produced when all elements of cell line development are optimally aligned and finely tuned.

16:05 Refreshment Break in the Exhibit Hall with Poster Viewing

ANTIBODIES TO WATCH

16:50 Antibodies to Watch in 2027

Silvia Crescioli, PhD, Independent Consultant

This presentation will provide a preview of key insights from Antibodies to Watch in 2027, including a review of antibody therapeutics first approved in 2026, those currently under regulatory review, and a projection of candidates likely to enter regulatory review by the end of 2027. The talk will also feature a focused analysis of emerging trends shaping the antibody therapeutics landscape, offering a data-driven perspective on innovation and pipeline evolution.

BEYOND MABs: RADIOPHARMACEUTICALS AND NEXT-GEN CONJUGATES

17:20 DARPins for Targeted Alpha Therapy: From Promising MP0712 First-in-Human Data to Opportunities for Next Radio-DARPin Candidates

Christian Reichen, PhD, Director, Oncology Research, Molecular Partners AG

DARPins are small, high-affinity protein scaffolds with promise as delivery vectors for targeted radiopharmaceutical cancer therapy. This presentation outlines preclinical strategies to advance radio-DARPin Therapeutics (RDT) toward clinical evaluation, focusing on enhanced tumour uptake and reduced kidney exposure. First patient images from compassionate care with MP0712, a DLL3-targeting 212Pb-based RDT, demonstrate selective uptake in primary and metastatic SCLC lesions, providing early clinical proof-of-concept for the RDT platform.

17:50 Targeting CEACAM5 with Lutetium-177-Conjugated Affibody Molecules

Torbjörn Gräslund, PhD, Professor, Department of Protein Science, KTH Royal Institute of Technology

Carcinoembryonic antigen adhesion molecule 5 (CEACAM5) is overexpressed in a subset of patients with colorectal carcinomas, mucinous carcinomas of the ovary and breast, and small-cell lung carcinomas, with minimal expression in normal tissue. We have developed affibody molecules that specifically target CEACAM5-overexpressing tumours and loaded them with lutetium-177. Preclinical studies in mice showed that the constructs can be used to efficiently treat CEACAM5-overexpressing pancreatic tumours with minimal side effects.

PREDICTIVE ANTIBODY PHARMACOKINETICS FOR CANDIDATE SELECTION

18:20 Beyond the Monkey: Humanized FcRn Mouse Models for Predictive Antibody Pharmacokinetics

The Jackson Laboratory

Adriano Flora, Ph.D., Director of Business Development, Europe, The Jackson Laboratory

Selecting the appropriate antibody candidate depends on the confidence that preclinical PK data will be predictive in humans. This presentation summarizes the evaluation of the effectiveness of the Tg32 and Tg276 humanized FcRn mouse models in predicting human antibody pharmacokinetics, including both standard and half-life-extended molecules. By analyzing a comprehensive translational dataset, we will cover allometric scaling, comparisons with non-human primates, and strategies to mitigate ADA, emphasizing their roles in lead optimization and candidate selection.

18:50 Welcome Reception in the Exhibit Hall with Poster Viewing

19:50 Close of Antibody-Based Therapies Conference

3RD ANNUAL | LISBON, PORTUGAL

ENGINEERING NEXT-GENERATION CONJUGATES

Expanding Modalities through Innovative Payload Delivery

WEDNESDAY 18 NOVEMBER

7:30 Registration and Morning Coffee

NOVEL FORMATS BEYOND CLASSICAL ADCs

8:25 Chairperson's Remarks

Rakesh Dixit, PhD, DABT, CEO & President, Bionavigen Oncology, LLC; CSO, TMAB Therapeutics, Regio Biosciences

Welcome to the Next-Generation Conjugates track. This field is evolving rapidly beyond classical ADCs into a broader landscape of precision-delivery platforms, with exciting advances in biology, chemistry, and engineering. Today's session will explore both the promise and the practical realities of designing conjugates that can truly translate into better medicines. Thank you for being here, and let us get started.



8:30 KEYNOTE PRESENTATION: Beyond Classical ADCs: Designing Next-Generation Conjugates for Precision, Tumour Uptake, and Therapeutic Index

Rakesh Dixit, PhD, DABT, CEO & President, Bionavigen Oncology, LLC; CSO, TMAB Therapeutics, Regio Biosciences

The field of conjugate therapeutics is evolving rapidly, showcasing the potential for impactful therapies. This keynote will focus on key design principles for success, including target biology, payload, and linker optimisation, tissue penetration, tumour-selective delivery, and manufacturability. It will highlight areas where innovation provides measurable benefits, discuss when added complexity may not improve outcomes, and identify essential factors for developing next-generation conjugates with significant clinical benefit.

9:00 Smaller ADC Formats Based on TheranoStick Technology Could Make the Difference for Solid Tumours

Meddy El Alaoui, PhD, CEO, AbTx

AbTx develops next-gen ADCs using our TheranoStick platform, generating smaller formats (FDCs) for improved tumour access, faster clearance, and enhanced cytotoxicity. Our enzymatic conjugation (transglutaminase + patented Q-Tag system) ensures site-specific payload attachment across full-length antibodies, Fabs, scFvs, and VHHs, boosting efficacy and safety.

9:30 Engineering a Fast-Clearing Protein Drug Conjugate for Enhanced Tumour Selectivity and Reduced Off-Tumour Toxicity

Joe Nabhan, PhD, CSO, K2B Therapeutics

Antibody-drug conjugates suffer from slow systemic clearance, driving off-tumour payload exposure and dose-limiting toxicity. We engineered KBA651, a compact SIRPa-based MMAE conjugate targeting CD47 as a tumour antigen, that exploits renal filtration to achieve rapid plasma clearance, reshaping the PK/PD relationship relative to IgG-based formats. By reducing systemic MMAE exposure while preserving tumour accumulation through CD47-mediated targeting, KBA651 decouples efficacy from toxicity yielding a differentiated paradigm for targeted payload delivery.

10:00 Bioconjugation Strategies to Enhance Oligonucleotides Therapeutic Efficacy

Nicolas Camper, PhD, Vice President, ADCs & Bioconjugates, Antibody Drug Conjugates & Bioconjugates, Abzena

Antibody Oligonucleotide Conjugates (AOCs) have emerged as a transformative modality to enhance the therapeutic activity of antisense oligonucleotides. However, translating AOCs into clinic-ready medicines is far from straightforward though. While AOCs build on the same bioconjugation principles as ADCs, oligo payloads are large, highly charged, and prone to degradation, which creates distinct challenges for the generation of AOCs. These differences change how conjugation chemistry, linker selection, and analytical characterization must be approached.
Learn how Abzena is applying its extensive conjugation experience across 3,000+ molecules to design and develop next-generation AOCs with more controlled oligo loading and improved stability. Through real-world case studies, we'll demonstrate how AOC programs come together from fAb intermediate development through GMP manufacture and highlight the key decisions that help de-risk development and shorten the path to the clinic.

10:30 Coffee Break in the Exhibit Hall with Poster Viewing

11:15 Bus2Brain: A Nanofitin-Based Platform for Targeted Brain Delivery of Oligonucleotide Therapeutics

Raphaelle Drean, PhD, Project Manager, Scientist, R&D, Affilogic

Bus2Brain is a Nanofitin-based platform enabling targeted delivery of oligonucleotides across the blood–brain barrier, overcoming key limitations of current approaches. It enables precise conjugation, multispecific design, and efficient brain accumulation, expanding the landscape of CNS delivery strategies. Supported by *in vivo* data, this scalable platform unlocks the therapeutic potential of oligonucleotides for central nervous system disorders.

3RD ANNUAL | LISBON, PORTUGAL

ENGINEERING NEXT-GENERATION CONJUGATES

Expanding Modalities through Innovative Payload Delivery



11:45 Unlocking the Potential of Bispecific Conjugates through Target Pair Discovery

Ben Dorgan, PhD, Senior Scientist, Valink Therapeutics

As the bsADC field grows, many programs converge on the same target pairs, without experimentally exploring the emergent biology created when they are combined. ADC differentiation should begin with biology, not with familiar targets. We developed a modular platform for unbiased screening of target pairs to find unexpected synergies. Using this approach, Valink is advancing a colorectal cancer program showing strong synergy over monospecific ADCs with promising *in vivo* activity.

12:15 LUNCHEON PRESENTATION: Accelerating BsADCs and dpADCs with High-Throughput Conjugation Technology and Integrated Discovery Platform

Jiawei Lu, Head of Bio-Conjugation Discovery Service, Discovery Service, WuXi XDC

High-throughput conjugation (HTC) accelerates the discovery of bispecific ADCs (BsADCs) and dual-payload ADCs (dpADCs). Using minimal antibody input, the platform enables rapid ADC generation and screening with consistent DAR and high purity. Combined with payload-linker screening, antibody screening, and an integrated discovery platform, it streamlines next-generation ADC development from antibody engineering to lead selection.

12:45 Luncheon in the Exhibit Hall with Poster Viewing

NOVEL PAYLOADS, SELECTIVITY, AND OVERCOMING RESISTANCE

14:00 Chairperson's Remarks

Tara Arvedson, PhD, CSO, Hexagon Bio

14:05 Identification of Novel Payloads and Payload Combinations for Next-Generation ADCs

Tara Arvedson, PhD, CSO, Hexagon Bio

Antibody-drug conjugates (ADCs) show clinical benefit across cancers, but resistance to topoisomerase and microtubule payloads limits durability. Hexagon Bio is using its natural product platform to discover ADC payloads with novel, non-overlapping MOAs and evaluate combination strategies for deeper responses. Its first payload inhibits protein translation; updates will cover efficacy, resistance activity, safety, and broader pipeline efforts.

14:35 Modular Albumin-based Biomolecular Designs for T-cell Engagers

Ken Howard, PhD, Associate Professor, Department of Molecular Biology and Genetics; Head, Bioengineered Drug Designs Laboratory, Aarhus University

This talk will describe albumin-based biomolecular designs and utilisation of nucleic acid assemblies for incorporation of functionalised oligonucleotide (ODN) modules into multispecific T-cell engagers (TCE).The application of an albumin scaffold containing sequences engineered with different neonatal Fc receptor (FcRn) affinity used to tune pharmacokinetics and efficacy of TCEs will be described followed by the introduction of an ODN module design for TCE and Immune Checkpoint Inhibitor (ICI) immuno-oncology combinations.

15:05 Tuned for CNS Delivery – Enhancing Receptor-Mediated Transcytosis with Affinity-Tunable Anti-TfR1 VHHs

Anette Sommer, PhD, Head, Bioconjugates Research, Lonza

Delivering biologics across the blood-brain barrier remains a major challenge for CNS therapeutics. We describe an affinity-tunable anti-TfR1 VHH approach designed to enhance receptor-mediated transcytosis and brain delivery. Using bispecific antibody case studies, we demonstrate how tuning TfR1 affinity influences BBB transport and supports optimization of CNS exposure while maintaining therapeutic functionality. The approach is adaptable across emerging modalities such as AOCs and targeted LNPs.

15:35 Transition to Keynote session

PLENARY KEYNOTE SESSION



15:45 Chairperson's Remarks

Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC



15:50 The Making of Multispecific Antibodies—A Clinical Perspective

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

- How has the field of multispecific antibodies evolved in recent years?
- What are the modes of action utilised by multispecific antibodies?
- What are the frequently used targets and target combinations?
- What are the emerging applications?



16:00 The Future of T Cell Engagers

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

- TCE approvals are catching up with ADC approvals
- Compelling single-agent activity in blood-borne and solid tumor indications
- Diverse formats and targets work for TCEs
- Several ways to augment the efficacy and safety of TCEs: hundred percent response rates at reach
- Treatment of minimal residual disease and target combinations
- Recent highlights pointing at the future of TCEs

3RD ANNUAL | LISBON, PORTUGAL

ENGINEERING NEXT-GENERATION CONJUGATES

Expanding Modalities through Innovative Payload Delivery

16:10 FIRESIDE CHAT: Emerging Modalities and the Future of Antibody Engineering






Moderator: Jennifer R. Cochran, PhD, Macovski Professor of Bioengineering, Stanford University; Co-Founder, Red Tree VC

- Bispecific antibodies and T cell engagers
- Design principles
- Complex formats: Trispecifics and costimulation
- Bispecifics compared to ADCs or CAR-T
- Next frontiers beyond cancer

Panelists:

Roland Kontermann, PhD, Professor & Deputy Head, Biomedical Engineering, University of Stuttgart

Patrick Baeuerle, PhD, Chief Scientific Advisor, Cullinan Therapeutics, Inc.

Ulrike Philippar, PhD, Vice President Oncology, Global Head of Discovery, Johnson & Johnson Innovative Medicine

16:50 Refreshment Break in the Exhibit Hall with Poster Viewing

YOUNG SCIENTIST MEET-UP

IN-PERSON ONLY: Young Scientist Meet Up

Raphaelle Drean, PhD, Project Manager, Scientist, R&D, Affilogic

Iris Goldman, Conference Producer, Cambridge Innovation Institute

Leire Oyon, Research Scientist, Protein Crystallography Unit, Navarrabiomed

Isabel Waibel, Graduate Student, Biochemical Engineering, ETH Zurich

The young scientist meet-up is an opportunity for scientists entering the field to develop connections across institutions, and for established leaders to come build relationships with the next generation of scientists. The meet-up will pave the way for mentorships, professional opportunities, and scientific discovery.

- Get to know fellow peers and colleagues
- Make connections and network with other institutions
- Inspire others and be inspired!

17:29 Chairperson's Remarks

Justyna Mysliwy, PhD, Senior Director, Research, Iksuda Therapeutics

17:34 Targeted Protein Alkylation as an Emerging ADC Payload Modality: Preclinical Profile of ProAlk ADCs

Justyna Mysliwy, PhD, Senior Director, Research, Iksuda Therapeutics

Developing ADCs with novel payloads will be critical to differentiate new assets in the clinic and allow for sequencing in the evolving treatment landscape. We will describe a new ADC payload platform for enhanced utility in previously treated and resistant or refractory cancer patients. We will establish protein alkylation as a differentiated, next-generation payload modality, and showcase the preclinical profile of ProAlk ADCs.

17:49 A Novel Degrader Antibody Conjugate for the Treatment of ADC-Resistant Cancers

Rogier Buijsman, PhD, CEO, Crossfire Oncology

There is a great need for novel ADC payloads with a different mode of action. Novel payloads can be used to treat ADC-resistant patients and expand patient populations. This talk will show the discovery of a novel PLK1/BET degrader payload and its application in a TROP2-targeting degrader antibody conjugate with excellent *in vivo* activity and a differentiating and mild toxicity profile.

18:19 An Avidity-Driven, Dual-Targeting ADC with Superior Tumour Selectivity for the Treatment of Solid Tumours

Christine Koehler, PhD, Director, Antibody Engineering, VERAXA Biotech GmbH

We present data of a bispecific ADC with increased tumour selectivity. By applying an AND-gate approach and our proprietary conjugation technology, our candidate addresses on-target and off-target limitations of ADCs, respectively. Consequentially, the bsADC can be armed with a highly potent PBD payload. Our candidate shows preferential killing of double target positive cells *in vitro*, and promising efficacy, tolerability, and pharmacokinetics in mice.

19:00 Close of Engineering Next-Generation Conjugates Conference

INAUGURAL | LISBON, PORTUGAL

NOVEL PEPTIDE DRUG DISCOVERY

Discovery, Engineering and Design



THURSDAY 19 NOVEMBER

8:00 Registration and Morning Coffee

ADVANCES IN PEPTIDE ENGINEERING

8:25 Chairperson's Remarks

Devleena Samanta, PhD, Assistant Professor, Department of Chemistry; Associate Member, Livestrong Cancer Institutes; Member, Dell Medical School, Texas Materials Institute, The University of Texas at Austin

8:30 Evolutionary Algorithms for Peptide Design and Optimisation

Sridhar Neelamraju, PhD, Associate Principal Informatician, AstraZeneca

Here, we present an evolutionary algorithm based on a softmax-guided particle swarm optimization (PSO) framework that adapts PSO to peptide sequence space using probabilistic, temperature-controlled softmax-guided mutations. We directly encode position constraints, including fixed positions, taboo residues, and position-specific substitution matrices, to perform single- or bi-objective optimization under Pareto dominance, enabling transparent trade-offs between binding and other predicted objective functions.

9:00 Long Acting, Stable Urocortin-2 Analogues for the Treatment of Obesity and Diabetes

Dennis Åsberg, PhD, Associate Project Director, Protein and Peptide Research, Novo A/S

Here, we will present the development of novel, long-acting and stable Urocortin-2 analogues. Obesity research is a hot topic where many pharmaceutical companies are heavily invested. CRF2 receptor agonists may provide a new approach to treat patients that works differently from GLP1 and amylin receptor agonists.

9:30 A New Technology for Endotoxin Removal from Biologicals and from Patient Blood

Dirk Linke, PhD, Professor, Molecular Microbiology, Department of Biosciences, University of Oslo

We have identified a synthetic peptide with an unprecedented affinity for lipopolysaccharides (LPS). The picomolar affinity will enable the development of endotoxin removal solutions, and potentially of clinical dialysis approaches.

10:00 Coffee Break in the Exhibit Hall with Poster Viewing

DELIVERY OF PEPTIDE THERAPEUTICS

10:44 Chairperson's Remarks

Sasha B. Ebrahimi, PhD, Scientific Leader, Emerging Drug Delivery Platforms, GlaxoSmithKline

10:45 Intracellular Delivery of Proteome-Modulating Peptides and Proteins

Chris Alabi, PhD, Fred H. Rhodes Professor of Engineering, Cornell University

Molecular degraders, particularly peptide-based degraders (PepTACs), offer a promising approach for targeted protein degradation, leveraging expanded interaction surfaces and structure-guided design. However, their translation is hindered by poor stability and limited cellular permeability. In this talk, I will present recent advances in intracellular delivery of proteins and PepTACs using anionic cloaking and amphiphilic loading strategies with lipid-based carriers to improve intracellular access-targeted proteome modulation.

11:15 Investigation of a Non-Nauseating Body Weight Loss Treatment Through the GPR10/74 Axis

Elise Bernard, PhD, Associate Principal Scientist, AstraZeneca

Obesity remains a major therapeutic challenge, with an ongoing need for highly effective treatments that offer improved tolerability. We have explored a differentiated biological pathway with the potential to regulate appetite and body weight without engaging aversive mechanisms.We will review how pharmacological profiling of peptides, *in vivo* efficacy studies, and genetic approaches revealed the challenges involved in translating compelling biology into a therapeutic strategy.

11:45 Attend Concurrent Session

12:15 Session Break

12:45 Luncheon in the Exhibit Hall with Last Chance for Poster Viewing

RATIONAL *DE NOVO* DESIGN AND LIBRARY-BASED DISCOVERY

14:00 Chairperson's Remarks

Aaron K. Sato, PhD, Chief Strategy Officer, Adimab, LLC



14:05 KEYNOTE PRESENTATION: Real-World Progress, Challenges, and Opportunities for AI in Protein and Peptide Discovery

Peter Clark, PhD, Vice President, Computational Drug Design, Novo Inc.

Learn how Novo Nordisk is embedding AI across the discovery value chain, moving beyond proof-of-concepts towards production, enterprise scaled digital capabilities to accelerate the delivery of differentiated therapeutics with an increased probability of success. From target druggability through API optimisation and NME delivery, we're applying disruptive digital innovation across discovery processes, demonstrating real world impact, observed pitfalls, failures, and grand challenges facing the field.

INAUGURAL | LISBON, PORTUGAL

NOVEL PEPTIDE DRUG DISCOVERY

Discovery, Engineering and Design





14:35 FEATURED PRESENTATION: Developing Membrane-Permeable Cyclic Peptides for Targeting Intracellular Proteins and for Oral Applications

Christian Heinis, PhD, Associate Professor, Lab of Therapeutic Proteins & Peptides, EPFL Lausanne

Our laboratory develops cyclic peptides for therapeutic applications, with a focus on membrane-permeable compounds capable of modulating intracellular targets and enabling oral delivery. We established a nanomole-scale discovery platform combining solid-phase synthesis, combinatorial diversification, acoustic dispensing, and high-throughput screening to rapidly generate and evaluate tens of thousands of sub-kilodalton cyclic peptides. Using this approach, we identified nanomolar ligands with favourable membrane permeability and demonstrated oral bioavailability for selected compounds.

15:05 PANEL DISCUSSION: Active-Learning Optimisation of a Therapeutic Peptide on Cradle

Moderator: Eli Bixby, Co Founder & Head, ML Research & Engineering, Cradle Bio

This conversation examines a therapeutic peptide programme in which Novo scientists used Cradle to combine human and machine-learning-guided designs in an active-learning loop, with experimental results from each round feeding the next, to reach a preclinical candidate from Novo's seed sequence in just two rounds. Peter Clark of Novo Nordisk and Eli Bixby of Cradle discuss how the teams set up the loop, how the expertise of chemists and computational scientists guided each round alongside model suggestions, and how Novo will apply the experience to its future programmes with Cradle.

Panelists:

Lena Erlach, Scientific Solutions Consultant, Cradle

INTERACTIVE DISCUSSIONS

15:35 Find Your Table and Meet Your Moderator

Interactive Breakout Discussions are informal, moderated discussions, allowing participants to exchange ideas and experiences and develop future collaborations around a focused topic. Each discussion will be led by a facilitator who keeps the discussion on track and the group engaged. To get the most out of this format, please come prepared to share examples from your work, be a part of a collective, problem-solving session, and participate in active idea sharing. Please visit the Interactive Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

TABLE 8: Strategies and Challenges for Intracellular Delivery of Peptides and Proteins

Chris Alabi, PhD, Fred H. Rhodes Professor of Engineering, Cornell University

- Delivery platform landscape; CPPs, LNPs, stapling, macrocycle, etc (strengths and weaknesses and where each is best suited)
- Measuring and quantifying delivery (cytosolic vs endosomaly trapped, different readouts)
- Cargo design considerations (how stability, charge, size, etc influence delivery efficiency and downstream biological activity)
- Future directions/emerging technologies (LNPs, AI-guided delivery vehicle design, etc)

16:15 Platforms for the Intracellular Generation and High-Throughput Screening of Cyclic Peptide Libraries

Ali Tavassoli, PhD, Professor of Chemical Biology, University of Southampton

Cyclic hexapeptides are a promising modality for targeting challenging interactions in drug discovery. We present platforms for generating genetically encoded cyclic peptide libraries in cells and microfluidic droplets, coupled to high-throughput functional assays for direct identification of inhibitors of protein–protein interactions, including first-in-class compounds. We also highlight examples where Microcycle hits have been scaffold-hopped into small molecules, enabling progression toward clinically relevant candidates.

16:45 Fluorination as a Molecular Design Parameter for Programming Peptide Nanocarriers

Beate Koksch, PhD, Professor, Organic Chemistry, Freie Universität Berlin

This talk will introduce fluorination as a quantitative molecular design parameter to program peptide self-assembly, morphology, and biological performance. More broadly, this talk will illustrate how precise control over side-chain chemistry can be leveraged to integrate structural programmability with functional delivery performance, opening new opportunities for the development of biodegradable, targeted drug delivery systems.

17:15 *De novo* Miniprotein-Based Therapies Tackling Challenging Targets

Ambrus Gordos, Researcher, Protein Design, VRG Therapeutics

VRG Therapeutics leverages its AI-driven, end-to-end platform AI-MPRO to develop novel miniprotein therapeutics to challenging targets such as ion channels and complex multi-protein interfaces. AI-MPRO enables efficient progression from discovery to preclinical *in vitro* and *in vivo* proof-of-concept by integrating *de novo* protein design with rapid *in silico*-experimental iteration. This approach generates compact, highly optimised, first-in-class or best-in-class therapeutic candidates for targets traditionally considered intractable.

17:45 Close of Summit

HOTEL & TRAVEL INFORMATION

PEGS EUROPE
Protein & Antibody Engineering Summit

Conference Venue:
Lisbon Congress Center
Pracas Das Industrias
Lisbon, 1300-307, Portugal



Host Hotels:
Pestana Palace Lisboa
Rua Jau, 54
1300-314, Lisbon, Portugal

Vila Gale Opera Hotel Lisbon
Travessa Conde da Ponte
1300-141 Lisbon, Portugal

Hyatt Regency Lisbon
Rua da Junqueira, 63
1300-343 Lisbon, Portugal

> **PEGS Europe is a gem for protein engineers with depth and breadth in a stimulating and engaging environment! I am glad that I came all the way from California to be a part of it.**
>
> **- Seung C., PhD,** Associate Director, Cell Biology, Xencor, Inc.

Please visit the pegsummiteurope.com/travel for reserving hotel accommodations and for additional Information.





SPONSORSHIP OPPORTUNITIES

Comprehensive sponsorship packages allow you to achieve your objectives before, during, and long after the event. Signing on earlier will allow you to maximise exposure to hard-to-reach decision-makers.

PODIUM PRESENTATIONS - AVAILABLE WITHIN MAIN AGENDA!

Showcase your solutions to a guaranteed, targeted audience through a 15- or 30-minute presentation during a specific conference program. Package includes exhibit space, onsite branding, and access to cooperative marketing efforts by CHI. Presentations do sell out early.

ONE-ON-ONE MEETINGS

Work with us to identify your target prospects and we will schedule meetings for you. Think of us as your inside sales team with all your hottest leads in close reach. Opportunities sold on a very limited basis.

INVITATION-ONLY DINNER/HOSPITALITY SUITE

Sponsors will select their top prospects from the conference preregistration list for an evening of networking at the hotel or at a choice local venue. CHI will extend invitations, conduct follow-up and confirm attendees. The evening will be customised to meet with your specific objectives.

EXHIBIT BOOTH SPACE (sold as part of sponsorship packages only)

Exhibitors will enjoy facilitated networking opportunities with over 1,500+ qualified delegates, making it the perfect opportunity to launch a new product, collect feedback, and generate new leads from around the world.

ADDITIONAL SPONSORSHIP & BRANDING OPPORTUNITIES INCLUDE:

- Opening Reception Sponsorship
- Poster Awards Sponsorship
- Literature Distribution
- Conference Tote Bags
- Conference Notebooks

HOW SPONSORING PROMOTES & BENEFITS YOUR BUSINESS:

- Generate qualified leads consisting of actual decision-makers from within your focus area
- Network with over 1,500+ senior-level professionals and generate leads during dedicated exhibit hall hours, lunches, etc.
- Promote your company's participation in the conference materials
- Increase your brand awareness and drive organic traffic to your website through our various marketing campaigns
- Increase dedicated networking time in the exhibit hall

FOR ADDITIONAL INFORMATION REGARDING SPONSORSHIP AVAILABILITY, PLEASE CONTACT:

COMPANIES A-K
Jason Gerardi
Sr. Manager, Business Development
781-972-5452 | jgerardi@healthtech.com

COMPANIES L-Z
Ashley Parsons
Manager, Business Development
781-972-1340 | ashleyparsons@healthtech.com

CONFERENCE PRICING

SHORT COURSES

	Commercial	Academic, Government, Hospital-Affiliated	Student*
One short course (All In-Person Only)	€629	€399	€129

Monday, 16 November | 14:00 - 17:00	
SC1: Reinventing Conjugate Therapeutics: Payload Revolution, Target Expansion and Clinical Translation	SC2: Developability of Bispecific Antibodies
SC3: In silico and Machine Learning Tools for Antibody Design and Developability Predictions	

CONFERENCE PRICING

BEST VALUE - Includes access to **ALL** conferences/Training Seminars Monday to Thursday. Plus, Virtual and On-Demand access for one year. Excludes short courses.			
Advance Registration Rate until 23 October	**€3899**	**€2199**	**€799**
Registration Rate after 23 October	**€4099**	**€2299**	
PREMIUM - Includes access to **THREE** conferences/Training Seminars. Plus, Virtual and On-Demand access for one year. Excludes short courses.			
Advance Registration Rate until 23 October	**€2999**	**€1499**	**€599**
Registration Rate after 23 October	**€3199**	**€1599**	
STANDARD - Includes access to **TWO** conferences. Plus, Virtual and On-Demand access for one year. Excludes short courses.			
Advance Registration Rate until 23 October	**€2699**	**€1349**	**€399**
Registration Rate after 23 October	**€2899**	**€1399**	
TRAINING SEMINAR ONLY - Includes access to **ONE Training Seminar Only**. Training Seminars take place In-Person only. Excludes short courses.			
Early Registration Rate until 11 September	**€1899**	**€1099**	
Advance Registration Rate until 9 October	**€2099**	**€1149**	**€299**
Registration Rate after 9 October	**€2299**	**€1199**	

	Monday 16 November	Tuesday 17 November	Wednesday 18 November	Thursday 19 November
ENGINEERING		C1B: Display of Biologics	C1C: Engineering Antibodies & Beyond	C1D: Machine Learning for Protein Engineering Part 2
TARGETS		C2B: Antibody-Based Cancer Therapies	C2C: Biologics for Autoimmune Diseases	C2D: Antibodies Against Challenging Targets
BISPECIFICS	TS1A: Introduction to Multispecific Antibodies: History, Engineering, and Applications	C3B: Safety and Efficacy of Multispecific Antibodies	C3C: Advancing Multispecific Antibodies and Combination Therapy to the Clinic	C3D: Engineering the Next Generation of Bispecific Antibodies
IMMUNOTHERAPY		C4B: T Cell Engagers	C4C: Advances in Immunoengineering	C4D: Next-Generation Immunotherapies
ANALYTICAL	TS2A: Everything You Ever Wanted to Know about Immunogenicity	C5B: Optimisation & Developability	C5C: Analytical Characterisation of Biotherapeutics	C5D: Protein Stability & Formulation
EXPRESSION	TS4A: Protein Production 201: Applying End-to-End CEPA Workflow	C6B: Leveraging Data Science for Enhanced Expression and Production	C6C: Designing High-Performance Expression Platforms	C6D: Highly Parallel Protein Discovery Workflows
MACHINE LEARNING	TS3A: Introduction to Machine Learning for Biologics Design	TS7B: AI-Driven Design of Biologics: A Hands-on Guide to Using State-of-the-Art ML Protein Models	C7C: Machine Learning for Protein Engineering Part 1	C1D: Machine Learning for Protein Engineering Part 2
THERAPEUTICS		C2B: Antibody-Based Therapies	C8C: Engineering Antibody-Drug Conjugates	C7D: Novel Drug Peptide Discovery
Training SEMINARS By Cambridge HealthTech Institute	TS1A: Introduction to Multispecific Antibodies: History, Engineering, and Applications TS2A: Everything You Ever Wanted to Know about Immunogenicity TS3A: Introduction to Machine Learning for Biologics Design TS4A: Protein Production 201: Applying End-to-End CEPA Workflow	TS7B: AI-Driven Design of Biologics: A Hands-on Guide to Using State-of-the-Art ML Protein Models		

See website for details on Group discounts and On-Demand options

** Pre-doctoral, full-time student*

ALUMNI DISCOUNT 20% OFF
POSTER DISCOUNT €50 OFF
POSTER DEADLINE: 9 OCTOBER 2026

WANT TO REGISTER BY PHONE?

Contact our Registration department at (+1) 781-972-5400 or Toll-free in the US 888-999-6288.

WAYS TO SAVE!

Alumni Discount - SAVE 20%:
CHI appreciates your participation at its events. As a result of the great loyalty you have shown us, we are pleased to extend to you the exclusive opportunity to save an additional 20% off the registration rate.

GROUP DISCOUNTS:
Have your colleagues or entire team attend! Purchase a full price registration and participants from the same organisation will receive a 20% discount when registering through the Group Registration page. LEARN MORE
For more information on group discounts contact Kristen Saunders at (+1) 781-247-6263

POSTER DISCOUNT: €50 OFF
POSTER SUBMISSION: Poster materials are due by 9 October 2026. Once your registration has been fully processed, we will send an email containing a unique link allowing you to submit your poster abstract and other materials. If you do not receive your link within 5 business days, please contact jring@healthtech.com.

POST-EVENT ON-DEMAND ONLY:
Includes post-event recorded access only. Does not include access to live Q&A or networking. LEARN MORE

ADDITIONAL REGISTRATION DETAILS
23% VAT will be added to each registration

**Alumni, Group, Protein Society or Antibody Society Membership, X, LinkedIn, Facebook, or any other promotional discounts cannot be combined. Discounts not applicable on Event Short Courses.*

VIDEO AND/OR AUDIO RECORDING OF ANY KIND IS PROHIBITED ONSITE AT ALL CHI EVENTS.

How to Register:
PEGSummitEurope.com
reg@healthtech.com
P: (+1) 781.972.5400
or Toll-free in the U.S.
888.999.6288
Please use keycode PGEF when registering