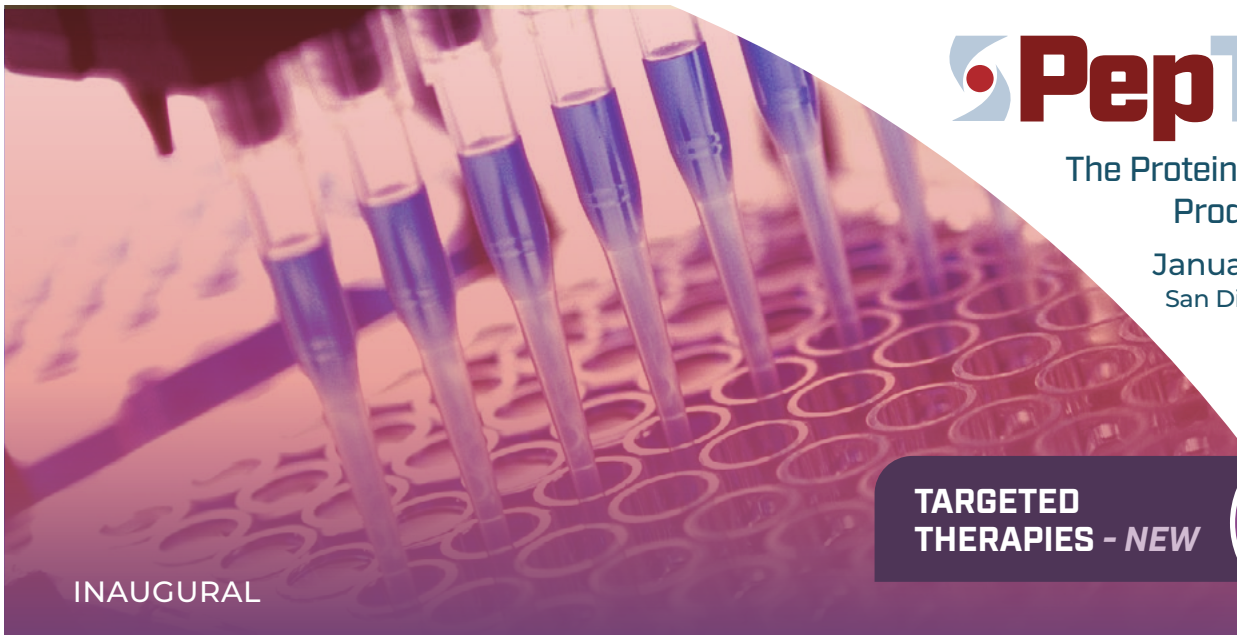

PepTalk

The Protein Science and Production Week

January 13-16, 2025
San Diego, CA + Virtual

TARGETED THERAPIES - *NEW*

INAUGURAL

Targeted Radioligand Therapies

Precision Medicine for Cancer

JANUARY 14-15, 2025

TUESDAY, JANUARY 14

7:30 am Registration and Morning Coffee

8:30 Organizer's Welcome Remarks

Mimi Langley, Executive Director, Conferences, Cambridge Healthtech Institute

CLINICAL TRIALS, DOSIMETRY, AND COMBINATION STRATEGIES

8:35 Chairperson's Remarks

Sarah M. Cheal, PhD, Assistant Professor, Biological Chemistry in Radiology, Cornell University

8:40 KEYNOTE PRESENTATION: Advancing Radiopharmaceuticals: Clinical Trials and Infrastructure for Therapeutic Success

Mary Jessel, PhD, Senior Vice President, Global Medical Affairs, Telix Pharmaceuticals

This presentation will cover clinical trial design and infrastructure, supply chain challenges, and future developments in radiotherapy, personalized dosimetry, and AI.

9:10 Commercial Considerations for the Development of Radiopharmaceuticals

Roland Turck, MD, Managing Partner, TurckBio

Radiopharmaceuticals are creating more interest than ever. To live up to their blockbuster promise, RPs have to be clearly better than competing conventional therapies, particularly ADCs. A framework to systematically assess how RPs can compete will be introduced. RPs will compete in early lines of therapy, implying that they will be used in combination—requiring thinking differently about clinical development. Imaging tracers can support development but add complexity.

9:40 The New Precision Therapies with Precision Diagnostics to Select Patients and Monitor Responses: Convergence of *in vivo* and *in Vitro*

Arshad Ahmed, Founder & CEO, Zaylan Associates

This presentation explores the synergy between precision therapies and diagnostics, and discusses how advanced diagnostics enable patient selection for innovative treatments. The talk will highlight the convergence of *in vivo* and *in vitro* techniques particularly in the emerging area of Radioligand Therapies (RLT) where we see need for incorporating "liquid biopsy" approaches to complement imaging. We will examine case studies showcasing successful applications of this approach and consider future directions.

10:10 Sponsored Presentation *(Opportunity Available)*

10:40 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing

11:20 Impact of Treatment Sequence, Radioisotope, and Tumor Immunogenicity on Anti-Tumor Immunity Following Combined Treatment with a Radiopharmaceutical and Immune Checkpoint Blockade

Zachary S. Morris, PhD, MD, Department Chair and Endowed Professor of Human Oncology, University of Wisconsin Madison

Radiopharmaceutical therapy (RPT) enhances tumor response to immune checkpoint inhibitors (ICI) in preclinical models. Here, we present results of preclinical investigation of the effects of treatment sequence, radioisotope properties, and tumor immunogenicity on the therapeutic interactions between RPT and ICIs in syngeneic murine tumor models.

11:50 Enhancing Efficacy of Immune Checkpoint Blockade with Targeted Radionuclide Therapies

Ravi B. Patel, MD, Assistant Professor and Physician, Radiation Oncology, University of Pittsburgh

The development of immune checkpoint blockades has revolutionized treatment paradigms for metastatic cancer. However, despite gains in tumor response and survival many patients eventually develop resistance to immunotherapy treatments. One strategy to enhance efficacy of

immunotherapy is through the use of targeted radionuclide therapy which can deliver immunomodulatory radiation to metastatic sites. We will highlight current results and future directions on the development of combination immunotherapy and radionuclide therapy treatments.

12:20 pm Session Break

12:30 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

1:00 Session Break

1:30 Refreshment Break in the Exhibit Hall with Poster Viewing

SUPPLY CHAIN AND QC CONSIDERATIONS

2:00 Chairperson's Remarks

Zachary S. Morris, PhD, MD, Department Chair and Endowed Professor of Human Oncology, University of Wisconsin Madison

2:05 Selecting Scalable Supply Chains for Radiopharmaceutical Manufacturing

Shaemus Gleason, Executive Vice President, Clarity Pharmaceuticals

Scalability issues have impeded several radiopharmaceutical launches in both diagnostic and therapeutic applications. Historical challenges with scalability have resulted in a lack of investment in certain isotopes and disruptions in patient care for others. To mitigate these issues in the future, it is crucial to select supply chains that inherently provide scalability. How can we ensure scalability in future radiopharmaceutical supply chains to avoid past pitfalls?

2:35 Quality-Control Considerations for Regulatory Approval

Eugene Borrelli, Senior Director, Quality Assurance, OranoMed

When designing production and quality-control processes during clinical supply, it's important to consider how these processes will be communicated to regulators and inspectors as the drug moves into the approval process. Early planning for validation and verification studies and documentation of the decisions made can be instrumental in educating these parties and can help make the approval process move smoothly.

3:05 Sponsored Presentation *(Opportunity Available)*

3:35 Refreshment Break in the Exhibit Hall with Poster Viewing

4:15 BuzZ Sessions

BuzZ Sessions 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 BuzZ Sessions page on the conference website for a complete listing of topics and descriptions.

IN-PERSON ONLY BREAKOUT: Challenges in the Production and Distribution of Short-Lived Radiopharmaceuticals

Arshad Ahmed, Founder & CEO, Zaylan Associates

- Time constraints from production, QC to delivery
- Pros and cons of decentralized production
- The need for specialized production facilities and highly skilled personnel
- Regulatory compliance
- Supply chain logistics
- Waste management

PRE-TARGETED RADIOIMMUNOTHERAPIES

5:00 DOTA Ligand–Bound Radionuclide-Based Pretargeted Radioimmunotherapy

Sarah M. Cheal, PhD, Assistant Professor, Biological Chemistry in Radiology, Cornell University

We utilize 1,4,7,10-tetraazacyclododecane-N, N', N", N'"-tetraacetic acid (DOTA) radiohapten capture to obtain high therapeutic indices during pretargeted radioimmunotherapy (PRIT). This strategy, known as DOTA-PRIT, involves using anti-tumor antigen/anti-(DOTA) radiohapten bispecific antibodies (BsAb) and DOTA-radiohaptens for therapy with lutetium-177 (^{177}Lu) and actinium-225 (^{225}Ac). Recently, we introduced the SADA (Self-Assembling Dis-Assembling) BsAb platform, and a Phase 1 trial of GD2-SADA + [^{177}Lu]Lu-DOTA in GD2-expressing solid tumors is underway (NCT05130255).

5:30 Pre-Targeted Radioimmunotherapy with Self-Assembling and Disassembling [SADA] Bispecific Fusion Proteins: Preclinical Evidence for Treatment of Solid and Hematological Malignancies

Brian Santich, Senior Director of Research, Y-mAbs Therapeutics Inc.

We present the latest findings from preclinical studies on self-assembling and disassembling (SADA) bispecific fusion proteins directed against solid and hematological tumors that overexpress the GD2 glycolipid (GD2-SADA) and CD38 glycoprotein (CD38-SADA), respectively. Our studies support a two-step approach to pretargeted radioimmunotherapy, clinical development of which is now underway with GD2-SADA and Lutetium-177 (Lu-177)-DOTA (NCT05130255) and CD38-SADA and Lu-177-DOTA (NCT05994157).

6:00 PreTarg-it Radioimmunotherapy with Bispecific Antibodies

Michael Thiele, PhD, Founder & CSO, Biology Research, OncoOne R&D GmbH

Radioimmunotherapy targets cancer cells using antibodies but is limited by radiation exposure to healthy tissues. The modular theranostic PreTarg-it system uses tumor-penetrating bispecific antibodies and radionuclide-labeled chelators fused to the HSG hapten. Pilot studies with the bispecific antibody ON105 targeting oxMIF and the 177Lu-labeled DOTA-di-HSG hapten (IMP288) showed significant tumor regression in colorectal and pancreatic cancer mouse models, indicating potential for treating challenging solid tumors and late-stage malignancies.

6:30 Networking Reception in the Exhibit Hall with Poster Viewing

7:30 Close of Day

WEDNESDAY, JANUARY 15

7:45 am Registration and Morning Coffee

NOVEL TARGETING MECHANISMS AND EMERGING TARGETS

8:15 Chairperson's Remarks

Shaemus Gleason, Executive Vice President, Clarity Pharmaceuticals

8:20 Expanding Targeted Radioligand Therapy to HER2-Expressing Breast Cancer Using Affibody Molecules as Targeting Vectors

Fredrik Frejd, PhD, CSO, Affibody AB

Breast cancer is a major cause of cancer-related death among women; molecular radiotherapy may improve the outcomes. HER2 is an important oncogenic driver in a large subset of breast cancers. Affibody-based HER2-specific clinical imaging has demonstrated pharmacological

access to the target in women with metastatic disease. Incorporating the same targeting vector with a biodistribution-modulating albumin binder, ABY-271, is in advanced preclinical development for targeted radioligand therapy.

8:50 Single-Domain Antibody-Based Radiopharmaceuticals for Novel Cancer Stroma Targets

Herman Steen, PhD, CEO, Cortalix

Single-domain antibodies (nanobodies), selected by means of synthetic libraries, have a number of advantages for development into radiopharmaceuticals. Due to their small size, they penetrate deeper into target tissue, they have a simpler structure, and they are much more stable, easier to functionalize, faster, and cheaper to make. Here, Cortalix presents the selection of single-domain antibodies for novel radiopharmaceutical targets for fibrosis and fibrotic cancers, such as colon cancer.

9:20 Dendrimer Nanoparticles (DEP) Enable Targeted Precision Delivery and Customized Biodistribution for Cancer Radiotheranostics

Jeremy Paull, Vice President, Development & Regulatory Affairs, Starpharma Holdings Ltd.

DEP dendrimer nanoparticles are a versatile, clinically validated platform that enables targeted and precision delivery and customized biodistribution profiles for cancer radiotheranostics and can be tailored in size to address shortcomings of small molecule and large antibody targeting. The biodistribution and efficacy of targeted DEP dendrimer radiotheranostics show a favorable biodistribution profile, with rapid blood clearance and significant tumor accumulation, coupled with anticancer activity in models of human disease.

9:50 Glypican-3 as Radiotheranostics Target for Hepatocellular Carcinoma and Neuroendocrine Prostate Cancer

Woonghee Lee, PhD, Postdoctoral Fellow, Molecular Imaging Branch, National Cancer Institute, National Institutes of Health

Glypican-3 (GPC3) is a membrane-associated proteoglycan that is significantly upregulated in hepatocellular carcinoma (HCC)—the most common type of liver cancer—and in neuroendocrine prostate cancer (NEPC), a rare but lethal subtype for which there are few treatments. Because HCC- and NEPC-selective imaging is critical for diagnosis, monitoring treatment response, and surveillance—and novel therapies are needed to improve outcomes—GPC3 represents a promising radiotheranostics target.

10:20 CD24-Targeted Radiotheranostics for Hepatocellular Carcinoma

Hima Makala, Research Scientist, Molecular Imaging and Therapy, NCI, NIH

When patients with hepatocellular carcinoma (HCC)—the most common type of liver cancer—are treated with embolization or radiotherapy, often clinicians cannot distinguish non-viable from viable/residual/recurrent disease with conventional CT/MRI imaging. While positron emission tomography (PET) imaging with 18F-fluorodeoxyglucose is used for other cancers, it is taken up in just 50% of HCC. CD24 is overexpressed in HCC and represents a promising radiopharmaceutical target for the imaging and treatment of HCC.

10:50 Booth Crawl with Bagels and Coffee in the Exhibit Hall with Poster Viewing *(Sponsorship Opportunity Available)*

PLENARY SESSION

11:35 Plenary Keynote Introduction *(Sponsorship Opportunity Available)*

11:45 Rethinking Transgene Design for Protein Expression

Jarrod Shilts, PhD, R&D Lead Scientist, ExpressionEdits Ltd.

If you compare a typical human gene to the transgenes used to manufacture proteins, they have markedly different structures despite being foundational to the biotechnology industry. At ExpressionEdits, we have revised the paradigm for how a mammalian transgene should look by re-introducing introns back into the cDNA sequence. We have trained an AI model of "genetic syntax" to learn how to combine coding and non-coding DNA to improve protein expression.

12:30 pm Session Break

12:40 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

1:10 Refreshment Break in the Exhibit Hall with Poster Viewing

PLENARY FIRESIDE CHAT

1:45 Plenary Fireside Chat Introduction *(Sponsorship Opportunity Available)*

1:55 Navigating the Professional Landscape: Strategic Pathways to Biotech Success

The career trajectories of protein scientists are as intricate as the biological products they work with. Just as protein-protein interactions are crucial in science, so too are the human connections that shape successful careers. This session offers insights from researchers at all career stages within academia, biopharma, biotech and tool developers on how they are navigating their professional journeys.

Key discussion points include:

- What draws professionals to a career in biotech?
- How can strategic collaborations and mentorships guide your career at any stage?
- Impact of DEI in the workplace?
- Is there a growing trend toward diversifying scientists' roles, skills, and responsibilities? If so, why?
- What motivates you to stay engaged in this dynamic industry?

2:30 Close of Targeted Radioligand Therapies Conference

2:30 Refreshment Break in the Exhibit Hall with Poster Viewing