## AUGUST 7-9, 2024

HILTON PHILADELPHIA AT PENN'S LANDING | PHILADELPHIA, PA + VIRTUAL



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Organized by Cambridge **Healthtech** Institute #IOSummit Immuno-OncologySummit.com



In the past 11 years, CHI's Immuno-Oncology Summit has grown into the premier annual meeting for advancing biotherapeutics. This summit offers a comprehensive 3-day 6-track program, exploring bi- and multispecific biotherapeutics; highlighting the latest developments in CAR T therapies, emerging targeting technologies, personalized immunotherapy, and cell-based immunotherapies; and addressing the challenges of overcoming tumor resistance. Attendees delve into predictive models, tumor microenvironment modulation, and the increasing role of AI and machine learning in cancer immunology. The summit serves as a vital platform for exchanging high-quality research and fostering collaboration in the ever-evolving landscape of immuno-oncology.

Every year, 375+ thought leaders and influencers from industry and academia converge to showcase the latest breakthroughs in cancer immunology. Beyond the enriching discussions, the dynamic venue fosters extensive networking and collaborative opportunities, empowering teams to focus on their objectives.

We look forward to seeing you in Philadelphia this August 7-9, where we convene to advance our understanding of the immune system, propelling the development of next-generation immunotherapies to optimize patient treatment outcomes.



## Plenary Keynote Session

## THURSDAY, AUGUST 8, 2024 | 11:25 AM

#### 11:20 am Organizer's Remarks

Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute



11:25 Accelerating Cell and Gene Therapy: Current Challenges and Future Directions Bruce L. Levine, PhD, Barbara & Edward Netter Professor, Cancer Gene Therapy, Center for Cellular Immunotherapies, University of Pennsylvania

New designs for genetically modified T cells include switches and potency enhancements that will be required for targeting solid tumors. Determining the critical quality attributes, dose, potency, and anticipating pharmacokinetics of a living, dividing drug presents unique challenges. Improving patient access depends not only on scientific progress in targeting, gene modification, and cellular manipulation, but also on meeting automation, engineering, clinical site onboarding, and health policy challenges.

#### 11:55 Transition to Lunch



Harbour Mice Advances Multispecific, CAR T, and ADC Therapy in a New Level



Jiyong Zhang, Vice President Head of Business Development, Business Development, Nona Biosciences HCAb Harbour Mice of Nona Biosciences is the first fully human Heavy Chain only Antibody (HCAb) transgenic mice platform in history. It is optimized, clinically validated with global patent

NONA

protection. Fully human heavy chain only Antibodies have high affinity and have excellent biophysical characteristics. They are the ideal antibody format to generate a multitude of next-generation therapeutic modalities, including bispecific/multispecific antibodies, ADCs, CAR-based, and mRNA therapeutics.

12:35 pm PLENARY KEYNOTE PANEL: Presentation to be Announced





## DINNER SHORT COURSES\*

## THURSDAY, AUGUST 8, 2024 | 5:30 - 8:00 PM | IN-PERSON ONLY

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.

#### SCI: In vitro Assays for Immuno-Oncology Candidate Selection and Optimization



Instructor:

Martijn Vlaming, PhD, Team Lead, Immuno-Oncology, ImmunXperts

Increased understanding of the tumor microenvironment boosts therapeutic interest and highlights the importance of

developing innovative *in vitro* bioassays. Combining live cell imaging, multiplex cytokine production analysis, and flow cytometry provides pivotal information on the functional dynamics of candidate therapeutics. T cell, myeloid, NK cell, and neutrophil-based assays each require specific considerations. Besides premium reagents, high-quality, primary human immune cells are essential for *in vitro* bioassays with superior robustness and reproducibility.

#### \*Separate registration required

#### SC2: Optimizing Solid Tumor Targeting and Penetration



Tony R. Arulanandam, DVM, PhD, Senior Vice President and Head R&D, Cytovia Therapeutics, Co-Founder NextPoint Therapeutics

This short course delves into the complexities of treating solid tumors in the realm of immunotherapy, tackling challenges, and presenting viable solutions. We examine techniques for crafting therapies with enhanced precision targeting, modifying the tumor microenvironment (TME) to facilitate deeper penetration, and addressing the hurdles posed by tumor heterogeneity. You will also gain insights into the clinical applications of these strategies and explore emerging technologies with promising prospects for the future.





## SPONSORSHIP & EXHIBIT OPPORTUNITIES

#### SPONSORSHIP & EXHIBIT OPPORTUNITIES

CII offers comprehensive packages that can be customized to your budget and objectives. Sponsorship allows you to achieve your goals before, during, and long after the event. Packages may include presentations, exhibit space, and branding, as well as the use of delegate lists. Signing on early will maximize your exposure to qualified decision-makers and drive traffic to your website in the coming months.

#### Podium Presentations - Available within Main Agenda!

Showcase your solutions to a guaranteed, targeted audience through a 15or 30-minute presentation during a specific program, breakfast, lunch, or a pre-conference workshop. Package includes exhibit space, on-site branding, and access to cooperative marketing efforts by CII. Lunches are delivered to attendees who are already seated in the main session room. Presentations will sell out quickly! Sign on early to secure your talk.

#### Invitation-Only VIP Dinner/Hospitality Suite

Select specific delegates from the pre-registration list to attend a private function at an upscale restaurant or a reception at the hotel. From extending the invitations, to venue suggestions, CII will deliver your prospects and help you make the most of this invaluable opportunity.

#### **One-to-One Meetings**

CII will set up 6-8 in-person meetings during the conference, based on your selections from the advance registration list. Our staff will handle invites, confirmations, and reminders, and walk the guest over to the meeting area. This package also includes a meeting space at the venue, complimentary main-conference registrations, branding, an 8'x10' exhibit space, and more.

#### Exhibit

Exhibitors will enjoy facilitated networking opportunities with qualified delegates, making it the perfect platform to launch a new product, collect feedback, and generate new leads. Exhibit space sells out quickly, so reserve yours today!

## Additional branding and promotional opportunities are available, including:

- » Conference Tote Bags
- » Literature Distribution (Tote Bag Insert or Chair Drop)
- » Badge Lanyards
- » Conference Materials Advertisement
- » Padfolios and More...



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#### 7TH ANNUAL

AUGUST 7-8

## **BISPECIFIC ANTIBODIES FOR CANCER IMMUNOTHERAPY**

Bispecific Breakthroughs: Reimagining Design, Manufacturing, & Safety

#### WEDNESDAY, AUGUST 7

7:30 am Registration and Morning Coffee

#### 8:30 Organizer's Remarks

#### ENGINEERING FOR IMPACT: IMPROVING EFFICACY AND TARGETING

#### 8:35 Chairperson's Opening Remarks

Even Walseng, PhD, Associate Director Biologics Engineering, Biologics Engineering, AstraZeneca

#### 8:40 Creating Cancer-Specific Neoantigens by Design and Targeting Them with Bispecific Antibodies

Takamitsu Hattori, PhD, Research Assistant Professor, Biochemistry and Molecular Pharmacology, NYU Grossman School of Medicine

Oncogenic mutants of intracellular proteins are attractive sources of tumor-specific neoantigens presented by MHC. However, recognizing minimal differences between oncomutations and their wild-type counterparts is challenging. We have established the HapImmune technology that exploits covalent inhibitors to create distinct neoantigens presented by MHC that can be targeted with antibodies. HapImmune bispecific antibodies selectively and potently kill drug-treated but drug-resistant cancer cells, thereby uniting targeted and immune therapies.

#### 9:10 PEGylated Bispecific ADC: Better Tumor Penetration and Lower Toxicity

Sam Shu-Min Liu, PhD, CEO & President, Princeton Enduring Biotech, Inc. JY108 is a pegylation bispecific T cell engager targeting CD3 and CD19. It was developed to address the limitations of blinatumomab, the first FDA-approved bispecific T cell engager (BiTE). JY108 has shown to exert potent cytolysis against target cells without extra cytokine release. The extended elimination half-life of JY108 overcomes the administration challenge of blinatumomab. JY108 is a promising therapeutic alternative to treat patients with CD19+ non-Hodgkin's lymphoma.

#### 9:40 A Bispecific T Cell Engager Targeting Mesothelin That Is Not Blocked by Shed Mesothelin

Ira H. Pastan, PhD, Co-Chief, Head & Distinguished Investigator, Molecular Biology, National Cancer Institute (NCI), National Institutes of Health Mesothelin is a popular target for antibody-based therapies. MSLN is shed in large amounts due to various proteases. Most anti-MSLN antibodies bind to shed MSLN, preventing their binding to target cells. Mab 15B6 binds to the protease sensitive region, does not bind to shed MSLN, and makes very active bispecific T cell engagers that produce complete remissions in mice, and whose tumor activity is not blocked by shed MSLN.

#### **BREAKOUT DISCUSSIONS & COFFEE**

#### 10:10 Networking Coffee Break with Breakout Discussions

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 Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

#### IN-PERSON BREAKOUT TABLE 1: Challenges and Advancements With Bi and Multi-Specific Antibodies

Mark A Tornetta, Vice President, Biologics Discovery, Tavotek Biotherapeutics • Challenges and solutions in bi- and multi-specific antibody design

- CMC considerations for bi- and multi-specifics
- Advancements in solid tumors and future directions

#### 10:55 Design Meets Biology: Importance of Avidity versus Geometry in Engineering T Cell Engagers

Even Walseng, PhD, Associate Director Biologics Engineering, Biologics Engineering, AstraZeneca

T cell engagers are rapidly transforming cancer care. Adapting these biotherapeutics to target the massive intracellular proteome has been a critical goal for improving cancer treatment—but it is challenging due to low cell-surface density antigen presentation. Here, we evaluate the interplay of geometry and valency on T cell engager bioactivity and demonstrate that geometry plays an important role in efficiently targeting low density cell-surface pMHC, rather than avidity.

## 11:25 Rapid, Site-Specific Labeling of "off-the-Shelf" and Native Serum Autoantibodies with T Cell-Redirecting Domains

Andrew Tsourkas, PhD, Co-Director, Center for Targeted Therapeutics and Translational Nanomedicine; Professor, Bioengineering, University of Pennsylvania

A simple method was developed for the site-specific, covalent attachment of T cellredirecting domains to any Immunoglobulin G (IgG) antibody. By labeling antibodies isolated from immunocompetent mice inoculated with NALM-6 leukemia cells, we show it is possible to generate T cell-redirecting autoantibodies that act as an effective therapeutic against NALM-6 tumors. The incorporation of autoantibodies into a bispecific antibody format presents a new paradigm in personalized cancer treatment.

11:55 Presentation to be Announced

12:25 pm Transition to Lunch

**12:35 Luncheon Presentation** (Sponsorship Opportunity Available) **or Enjoy Lunch on Your Own** 

1:05 Session Break

#### TRANSFORMING SOLID TUMOR TREATMENT

#### 1:45 Chairperson's Remarks

Starlynn Clarke, PhD, Director, Preclinical Biology, Rondo Therapeutics

#### 1:50 Building Differentiated & Next Generation T Cell Engagers to Improve Responses in Difficult-to-Treat Tumors

Nicole Afacan, PhD, Principal Scientist, Therapeutics Research, Zymeworks Inc T cell engagers (TCEs) have shown limited success against solid tumors due to design limitations and tumor biology. To overcome these challenges, we developed ZW171, a novel T-cell targeting bispecific antibody for mesothelin-expressing cancers, designed to improve the therapeutic window. Additionally, our TriTCE Co-stim platform incorporates CD28 co-stimulation to enhance T cell function and antitumor responses in solid tumors with limited T cell availability and poor T cell function.

## 2:20 Co-Stimulatory Bispecific Antibody Strategies for Treating Solid Tumors

Starlynn Clarke, PhD, Director, Preclinical Biology, Rondo Therapeutics Co-stimulatory bispecific antibodies have the potential to drive durable and robust anti-tumor responses either as single agents or in combination with CD3-engaging antibodies. In this presentation, we describe the bispecific platforms developed at Rondo Therapeutics and how we plan to use these to treat solid tumors in the clinic. We highlight progress on our lead program, RND0-564, a CD28 x Nectin-4 bispecific antibody for treatment of metastatic bladder cancer.

2:50 Sponsored Presentation (Opportunity Available)

3:20 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing

#### 4:00 Infiltrating Solid Tumor Stromal Barriers with Trispecific Antibodies

Chao Han, PhD, Senior Vice President, Early Development, Tavotek Biotherapeutics







## **BISPECIFIC ANTIBODIES FOR CANCER IMMUNOTHERAPY**

Bispecific Breakthroughs: Reimagining Design, Manufacturing, & Safety

TAVO412, a humanized multispecific antibody with two distinct anti-EGFR nanobody domains, an anti-cMet Fab arm, and an anti-VEGF ScFv, was designed to treat patients with gastric, TNBC, and pancreatic cancer subtypes that are driven by abnormal EGFR signaling, increased cMET activation, and VEGF-linked angiogenesis. The engineered Fc domain provides enhanced effector function, antibody-like pharmacokinetic profile, and enables single-cell line CMC. US FDA IND and China NMPA have been approved.

#### 4:30 Therapeutic Potency of SAIL66—A Next-Generation T Cell Engager—Against CLDN6-Positive Tumors

**7TH ANNUAL** 

## Naoki Kimura, PhD, Scientist, Discovery Pharmacology, Chugai Pharmaceutical Co. Ltd.

The development of conventional T cell engagers (TCEs) for solid tumors presents two challenges: the risk of "on-target, off-tumor toxicity" and T cell dysfunction associated with signal 1-dependent T cell activation. We generated SAIL66, a tri-specific antibody against CLDN6/CD3/CD137. By applying our proprietary next-generation TCE technology (Dual-Ig), SAIL66 activates both signal 1 and signal 2, therefore appropriately activating T cells and demonstrating more potent anti-tumor effects than conventional TCEs.

#### 5:00 ABBV-184: A Novel Survivin-Specific CD3 Bispecific T Cell Engager Is Active against Both Solid Tumor and Hematological Malignancies

Feng Dong, PhD, Principal Research Scientist II, Foundational Immunology, AbbVie Cambridge Research Center

ABBV-184, a novel TCR/anti-CD3 bispecific composed of a highly selective soluble TCR that binds a peptide derived from the oncogene survivin (BIRC5) bound to the Class I MHC allele human leukocyte antigen (HLA)-A2:01 expressed on tumor cells, and a specific binder to the CD3 receptor on T cells. ABBV-184 is an attractive clinical candidate for the treatment of patients with AML and NSCLC.

#### 5:30 Welcome Reception in the Exhibit Hall with Poster Viewing

#### WOMEN IN SCIENCE MEET-UP

#### 6:10 pm Women in Science Meet-Up IN-PERSON ONLY



Theresa M. LaVallee, PhD, Chief Development Officer, Coherus Biosciences Theresa L. Whiteside, PhD, Professor, Pathology, Immunology & Otolaryngology, UPMC Hillman Cancer Center, University of Pittsburgh Cancer Institute

• Which woman has been an inspiration/mentor to you in your career?

• How can we encourage young women in science?

What were your biggest work-life balance challenges and what have you done to manage these?

6:30 Close of Day

#### THURSDAY, AUGUST 8

#### 7:30 am Registration and Morning Coffee

#### PROMISE TO PRACTICE: OPTIMIZATING SAFETY AND CLINICAL PERFORMANCE

#### 8:00 Chairperson's Remarks

Rakesh Dixit, PhD, DABT, President & Founder, Bionavigen Oncology, LLC and Regio Biosciences



#### 8:05 KEYNOTE PRESENTATION: Safety Challenges of Bispecific Immunotherapeutics and Antibody-Drug Conjugates

Rakesh Dixit, PhD, DABT, President & Founder, Bionavigen Oncology, LLC and Regio Biosciences Bispecific immunotherapeutic biologics offer tremendous potential to improve clinical efficacy and safety by targeting two different antigens in immune and tumor cells. In this presentation, we will provide an in-depth analysis of the safety challenges associated with bispecific immunotherapies and the rapidly rising use of antibody-drug conjugates, offering a comprehensive understanding of these complex issues.

#### 8:35 Translational PK/PD and the First-in-Human Dose Selection of a PD1/IL15 Targeted Cytokine: An Engineered Recombinant Fusion Protein for Cancer Immunotherapy

Rajbharan Yadav, PhD, Senior Principal Scientist, Development Sciences, Genentech

We engineered a targeted cytokine, PD1/IL15 TaCk, combining an anti-PD-1 antibody with engineered IL-15. This construct delivers IL-15 signaling selectively to PD-1- expressing lymphocytes. Using the MABEL approach and studying PK/PD effects in cynomolgus monkeys, we determined the first-in-human (FIH) dose (0.003 mg/kg) and dosing frequency (Q3W) for clinical trials. Our findings shed light on the complex PK/PD dynamics of PD1/IL15 TaCk, informing dose selection and dosing frequency for clinical evaluation.

#### 9:05 Accelerating Bispecific Discovery with the Alloy Common Light Chain Fully Human Transgenic Mouse Platform



Mike Schmidt, Chief Scientific Officer, Alloy Therapeutics

Alloy bispecific discovery services integrate best-in-class platforms with world class scientists to serve as an extension of your R&D team. Building on industry leading mouse platforms for fully human antibody discovery, Alloy has created Common Light Chain strains, ATX-CLC, to build bispecifics with better developability profiles by solving heavy and light chain pairing. Leveraging ATX-CLC Alloy supports bispecific discovery through format engineering and functional assessment to move candidates forward rapidly.

#### 9:35 Coffee Break in the Exhibit Hall with Poster Viewing

## 10:15 Benefit and Risk Considerations for Dose Optimization in Immuno-Oncology

## Mohamed Elmeliegy, PhD, Director Clinical Pharmacology, Clinical Pharmacology, Pfizer Inc.

This presentation explores dose optimization, a strategy to find the ideal balance. By meticulously evaluating response and side effects across different doses, researchers aim to pinpoint the sweet spot that maximizes effectiveness while minimizing adverse reactions, potentially leading to better outcomes and improved tolerability for patients.

#### 10:45 PANEL DISCUSSION: Bringing Safety to the Clinic

Moderator: Rakesh Dixit, PhD, DABT, President & Founder, Bionavigen Oncology, LLC and Regio Biosciences

• Optimizing bispecific antibody design to minimize off-target effects and potential for cytokine release syndrome.

- · Designing robust preclinical studies to evaluate potential safety risks
- Strategies for improving clinical trial design and monitoring
- Management of adverse events
- Addressing potential long-term safety concerns and immunogenicity risks associated with bispecific antibodies.

#### Panelists:

#### Chao Han, PhD, Senior Vice President, Early Development, Tavotek Biotherapeutics

Sam Shu-Min Liu, PhD, CEO & President, Princeton Enduring Biotech, Inc. Rajbharan Yadav, PhD, Senior Principal Scientist, Development Sciences, Genentech

#### 11:15 Transition to Plenary Keynote

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Bispecific Breakthroughs: Reimagining Design, Manufacturing, & Safety

#### **PLENARY KEYNOTE SESSION**

#### 11:20 Organizer's Remarks

Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute



## 11:30 Accelerating Cell and Gene Therapy: Current Challenges and Future Directions

Bruce L. Levine, PhD, Barbara & Edward Netter Professor, Cancer Gene Therapy, Center for Cellular Immunotherapies, University of Pennsylvania New designs for genetically modified T cells include switches and

potency enhancements that will be required for targeting solid tumors. Determining the critical quality attributes, dose, potency, and anticipating pharmacokinetics of a living, dividing drug presents unique challenges. Improving patient access depends not only on scientific progress in targeting, gene modification, and cellular manipulation, but also on meeting automation, engineering, clinical site onboarding, and health policy challenges.

#### 12:00 pm Transition to Lunch



#### **12:15 LUNCHEON PRESENTATION:**



#### HCAb Harbour Mice Advances Multispecific, CAR T, and ADC Therapy to a New Level

Jiyong Zhang, PhD, Vice President Head of Business Development, Business Development, Nona Biosciences HCAb Harbour Mice of Nona Biosciences is the first fully human heavy chain only

antibody (HCAb) transgenic mice platform in history. It is optimized, clinically validated with global patent protection. Fully human heavy chain only antibodies have high affinity and have excellent biophysical characteristics. They are the ideal antibody format to generate a multitude of next-generation therapeutic modalities, including bispecific/multispecific antibodies, ADCs, CAR-based, and mRNA therapeutics.



## 12:45 The Outlook for Innovation in IO: A VC Perspective

Jakob Dupont, MD, Executive Partner, R&D, Sofinnova Investments

Immuno-oncology treatments from checkpoint inhibitors to cytokine therapies to bispecific antibodies and cell therapies have made a profound impact on patients' lives. There have been significant IO products successes but also notable failures in the development of these drug candidates. This talk will present a perspective on how IO agents are assessed by VCs and what VCs are looking for to create value for patients and investors in IO.

1:20 Close of Bispecific Antibodies for Cancer Immunotherapy Conference



#### AUGUST 7-8



ADVANCES IN CAR T THERAPY

Breaking Barriers in CAR T: Engineering, Synergistic Strategies, & Beyond

#### WEDNESDAY, AUGUST 7

7:30 am Registration and Morning Coffee

11TH ANNUAL

#### 8:30 Organizer's Remarks

#### PRECISION BY DESIGN: ENGINEERING THE NEXT-GENERATION OF CAR T

#### 8:35 Chairperson's Opening Remarks

Saba Ghassemi, PhD, Research Assistant Professor Pathology & Lab Medicine, Center for Cellular Immunotherapies, University of Pennsylvania



#### 8:40 FEATURED PRESENTATION: Disruption of SUV39H1-Mediated H3K9 Methylation Sustains CAR T Cell Function

Sjoukje van der Stegen, PhD, Research Fellow, Memorial Sloan Kettering Cancer Center

CAR T cell therapy holds promise for cancer treatment, but maintaining CAR T cell function over time remains a challenge. This study investigates a method to improve CAR T cell persistence and function. By altering a specific molecular process (H3K9 methylation), the research demonstrates enhanced anti-tumor activity. This approach has the potential to improve the efficacy of CAR T cell therapies.

#### 9:10 Type I Interferon Blockade Enhances Transduction Efficiency and Efficacy of Non-Activated CAR T Cells

Saba Ghassemi, PhD, Research Assistant Professor Pathology & Lab Medicine, Center for Cellular Immunotherapies, University of Pennsylvania

Chimeric antigen receptor (CAR) T cell therapy shows promise against cancer. However, current methods activate T cells before engineering them, potentially limiting their effectiveness. This study explores blocking type I interferon, a natural immune response, during CAR T cell engineering of non-activated T cells. This approach aims to improve the efficiency of CAR integration and potentially lead to more potent CAR T cells for cancer treatment.

#### 9:40 Hybrid CAR T Cells with Engineered Fuel Selectivity

Roderick O'Connor, PhD, Research Assistant Professor, Pathology & Lab Medicine, University of Pennsylvania

Here we show that Glut5-expressing CAR T cells have superior anti-tumor function to standard CAR Ts in a xenograft model of AML. Fructose supports maximal glycolytic capacity and ATP replenishment rates in GLUT5-expressing T cells cultured in glucose-free conditions. As fructose is abundant within the bone marrow of AML patients, our findings have immediate translational relevance, indicating that fructose can be repurposed as fuel for CAR T cells against AML.

#### **BREAKOUT DISCUSSIONS & COFFEE**

#### 10:10 Networking Coffee Break with Breakout Discussions

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 Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

#### **IN-PERSON BREAKOUT TABLE 2: Precision Tailoring CAR T Therapy**

Julia A Coronella, PhD, VP Immuno Oncology, Immuno Oncology, Poseida Therapeutics Inc

- · Considerations for TSCM-based CAR T products
- Autologous vs allogenic therapy
- Viral vs non-viral methodologies

#### 10:55 Engineering Macrophages for Cancer Immunotherapy: CAR M, in vivo Reprogramming, and Beyond

Michael Klichinsky, PharmD, PhD, Co-Founder & Chief Scientific Officer, Carisma Therapeutics

Current cancer immunotherapy struggles to harness the full potential of macrophages. This study explores innovative methods to engineer macrophages for tumor destruction. Investigating CAR M (Chimeric Antigen Receptor Macrophages) and *in vivo* reprogramming, the research proposes a revolutionary approach to rewire macrophages, leveraging their abilities to fight cancer.

#### 11:25 Precision Targeting of the Malignant Clone in B Cell Malignancies Using Chimeric Antigen Receptor T Cells against the Clonotypic IGHV4-34 B Cell Receptor

Ivan J. Cohen, PhD, Postdoc Researcher, Hematology & Oncology, University of Pennsylvania

This study proposes a precision medicine approach for B-cell malignancies using CAR T cells. It involves engineering T cells with a CAR that recognizes the IGHV4-34 B Cell Receptor (BCR). This targeted therapy aims to specifically eliminate malignant B-cells while sparing healthy B-cells, potentially leading to a more effective and safer treatment for B-cell malignancies.

#### 11:55 Presentation to be Announced

TelesisBio

The BioXp system speeds up personalized cancer therapy by automating DNA and mRNA synthesis for TCR and CAR T therapies. It cuts development time from 45 to 12-13 days, making screening 3X faster. This change speeds up treatment delivery and improves outcomes.

12:25 pm Transition to Lunch

12:35 Luncheon Presentation (Sponsorship Opportunity Available) or Enjoy Lunch on Your Own

1:05 Session Break

#### INNOVATIVE SOLUTIONS FOR IMPROVED CAR T OUTCOMES

#### 1:45 Chairperson's Remarks

Alba Gonzalez, PhD, Associate Director, In Vivo Translational Pharmacology, Arsenal Bio

#### 1:50 Engineering Next-Gen CAR T Cells: Leveraging mRNA for Optimal T Cell Design

Stella Khiew, PhD, Senior Scientist, Merck & Co.

Current CAR T cell therapy is constantly evolving. This study explores the use of messenger RNA (mRNA) technology for engineering next-generation CAR T cells. By harnessing mRNA's unique properties, researchers aim to create CAR T cells with improved functionality and efficacy, potentially leading to a new wave of more potent cancer treatments.

#### 2:20 In Vivo Generation of CAR T and NK Cells Utilizing an Engineered Lentiviral Vector

#### Philip R. Johnson, MD, CEO, Interius Biotherapeutics

Current CAR T cell therapy often involves extracting and engineering T cells outside the body. This study explores *in vivo* generation of CAR T cells. This approach aims to create CAR T cells directly within a patient, potentially leading to improved therapeutic outcomes in immuno-oncology (IO) by overcoming limitations associated with *ex vivo* manipulation.

2:50 Sponsored Presentation (Opportunity Available)

3:20 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing



## ADVANCES IN CAR T THERAPY

Breaking Barriers in CAR T: Engineering, Synergistic Strategies, & Beyond

#### 4:00 Targeted Fusogens Enable Potent *in vivo* CAR T Generation with High Cell-Specificity

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*Kyle M. Trudeau, PhD, Senior Director, Innovation, Sana Biotechnology, Inc.* At Sana we have leveraged a paramyxovirus-based fusogen system that can be intentionally retargeted to deliver therapeutic payloads in a cell-specific manner. The fusogen mechanism of delivery directly couples target receptor binding to cell entry, enabling high-on vs. off-target cell discrimination. We show that retargetable fusogens enable cell-specific *in vivo* delivery of lentiviral vectors for *in vivo* CAR-T therapy, as well as virus-like particles for gene editing payloads.

#### 4:30 Understanding and Overcoming T-Cell Therapy Challenges for Brain Tumors

Giedre Krenciute, PhD, Associate Professor, Bone Marrow Transplantation & Cellular Therapy, St. Jude Children's Research Hospital

Current CAR T cell therapy for aggressive brain tumors shows limited success. This presentation explores next-generation CAR T cells, engineered with improved functionalities. These advancements aim to address challenges like immunosuppressive environments and antigen escape, potentially leading to more efficient targeting and destruction of gliomas.

#### 5:00 Targeting Solid Tumors with Integrated Circuit T Cells

Alba Gonzalez, PhD, Associate Director, In Vivo Translational Pharmacology, Arsenal Bio

Traditional T cell therapies for solid tumors face limitations. This study explores Integrated Circuit T Cells (ICTs), a novel engineered T cell design. ICTs incorporate multiple functionalities, overcoming challenges that use conventional methods. This research investigates ICTs as a promising approach for achieving more precise and effective targeting of solid tumors.

#### 5:30 Welcome Reception in the Exhibit Hall with Poster Viewing

#### WOMEN IN SCIENCE MEET-UP

#### 6:10 pm Women in Science Meet-Up IN-PERSON ONLY



Theresa M. LaVallee, PhD, Chief Development Officer, Coherus Biosciences Theresa L. Whiteside, PhD, Professor, Pathology, Immunology & Otolaryngology, UPMC Hillman Cancer Center, University of Pittsburgh Cancer Institute

• Which woman has been an inspiration/mentor to you in your career?

How can we encourage young women in science?

What were your biggest work-life balance challenges and what have you done to manage these?

6:30 Close of Day

#### THURSDAY, AUGUST 8

7:30 am Registration and Morning Coffee

#### SAFETY AND BEYOND: CLINICAL CONSIDERATIONS AND ADVANCEMENTS

#### 8:00 Chairperson's Remarks

Nagendra V. Chemuturi, PhD, Senior Director, Eli Lilly and Company

8:05 Best Practices and Considerations for Clinical Pharmacology and Pharmacometric Aspects for Optimal Development of CAR T Therapies

Nagendra V. Chemuturi, PhD, Senior Director, Eli Lilly and Company

This presentation outlines essential considerations in clinical pharmacology and pharmacometrics for optimal development of CAR T cell therapies. It delves into pivotal aspects such as dosing, toxicity management, and patient-specific variability. By integrating best practices in these domains, CAR T therapies can achieve enhanced efficacy, safety, and personalized treatment outcomes, advancing the frontier of cancer immunotherapy.

#### 8:35 Presentation to be Announced

- 9:05 Sponsored Presentation (Opportunity Available)
- 9:35 Coffee Break in the Exhibit Hall with Poster Viewing

#### 10:15 VIPER-101: Gene-Edited, Autologous, Dual-Population CAR T Cell Therapy for T Cell Lymphoma; CD5 Knockout, Anti-CD5 Chimeric Antigen Receptor T Cell with SENZA5 Technology Nick A. Siciliano, PhD, CEO, VITToria Biotherapeutics

VIPER-101, a novel T cell therapy, targets T cell lymphoma. This approach engineers a patient's own immune cells (autologous) with a dual modification. First, it prevents self-targeting by the therapy. Second, it equips the cells to recognize and attack the cancer cells. This strategy, utilizing SENZA5 technology holds promise for a safer and more

effective treatment of T cell lymphoma.

#### 10:45 The Advantages of CAR Tscm-Rich Allogeneic Approaches in Oncology

#### Julia A Coronella, PhD, VP Immuno Oncology, Immuno Oncology, Poseida Therapeutics Inc

Stem cell memory T cells ( $T_{scm}$ ) are optimal for CAR-T therapy due to their less differentiated state, which can result in better clinical responses and reduced toxicity. This presentation examines the development of  $T_{scm}$ -predominant allogeneic CAR-T using non-viral methods and discusses preclinical data supporting the improved efficacy and toxicity profiles of Poseida's allogeneic CAR-T.

#### 11:15 Transition to Plenary Keynote

#### **PLENARY KEYNOTE SESSION**

#### 11:20 Organizer's Remarks

Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute



11:30 Accelerating Cell and Gene Therapy: Current Challenges and Future Directions

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#### 12:00 pm Transition to Lunch



#### 12:15 LUNCHEON PRESENTATION:

HCAb Harbour Mice Advances Multispecific, CAR T, and ADC Therapy to a New Level

Jiyong Zhang, PhD, Vice President Head of Business Development, Business Development, Nona Biosciences

HCAb Harbour Mice of Nona Biosciences is the first fully human heavy chain only antibody (HCAb) transgenic mice platform in history. It is optimized, clinically validated with global patent protection. Fully human heavy chain only antibodies have high affinity and have excellent biophysical characteristics. They are the ideal





## **ADVANCES IN CAR T THERAPY**

Breaking Barriers in CAR T: Engineering, Synergistic Strategies, & Beyond

antibody format to generate a multitude of next-generation therapeutic modalities, including bispecific/multispecific antibodies, ADCs, CAR-based, and mRNA therapeutics.

11TH ANNUAL



## 12:45 The Outlook for Innovation in IO: A VC Perspective

Jakob Dupont, MD, Executive Partner, R&D, Sofinnova Investments

Immuno-oncology treatments from checkpoint inhibitors to cytokine therapies to bispecific antibodies and cell therapies have made a profound impact on patients' lives. There have been significant IO products successes but also notable failures in the development of these drug candidates. This talk will present a perspective on how IO agents are assessed by VCs and what VCs are looking for to create value for patients and investors in IO.

1:15 Close of Advances in CAR T Therapy Conference





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## THERAPEUTIC CANCER VACCINES

AUGUST 7-8

Innovative Vaccine Strategies to Advance Cancer Immunotherapy

#### WEDNESDAY, AUGUST 7

7:30 am Registration and Morning Coffee

8:30 Organizer's Remarks

#### **mRNA-BASED CANCER VACCINES**

#### 8:35 Chairperson's Remarks

Philip Arlen, MD, President & CEO, Precision Biologics



platform.

#### 8:40 KEYNOTE PRESENTATION: mRNA

Therapeutics in Cancer: Coming of Age Robert S. Meehan, MD, Senior Director, Clinical Development, Moderna

The advent to mRNA technology has unleashed a new wave of medicines, starting with COVID vaccines. The recent exciting data in melanoma and pancreatic cancer portends the power of this platform for unique applications in cancer. This presentation will highlight the latest developments of mRNA technology for immuno-oncology, including emerging clinical and translational data, ongoing studies, and future development opportunities with this

#### 9:10 Personalized Therapeutic mRNA Nano-Vaccines

Natalie Silver, MD, Director, Head and Neck Cancer Research, Center for Immunotherapy & Precision Immuno-Oncology, Cleveland Clinic The therapeutic application of messenger RNA (mRNA) has ignited optimism in the pursuit of curing challenging diseases like cancer. We have translated a novel personalized therapeutic mRNA lipid nanoparticle vaccine from preclinical studies to firstin-human clinical trials in brain cancer. We have demonstrated vaccine efficacy in head and neck cancer preclinical models and pet felines with oral cancer and look forward to a Phase I clinical trial for head and neck.

## 9:40 PANEL DISCUSSION: Progress and Prospects for Cancer Vaccines

#### Moderator: Philip Arlen, MD, President & CEO, Precision Biologics

A tremendous transformation in our understanding of the immune system has occurred over the past 130 years since Coley observed tumor regression following administration of the first vaccines using bacterial toxins. Since the late 1990s a number of approaches have been implemented to approve immune responses via vaccinations. With new approaches, including mRNA vaccines and other immunotherapies enhancing T cell function, which vaccines and combinations will be most effective therapeutically? **Panelists:** 

#### Peter C. DeMuth, PhD, CSO, Elicio Therapeutics

Keith Knutson, PhD, Professor, Immunology, Mayo Clinic Natalie Silver, MD, Director, Head and Neck Cancer Research, Center for Immunotherapy & Precision Immuno-Oncology, Cleveland Clinic

#### **BREAKOUT DISCUSSIONS & COFFEE**

#### 10:10 Networking Coffee Break with Breakout Discussions

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 Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

#### IN-PERSON BREAKOUT TABLE 3: Therapeutic Cancer Vaccines: Key Areas of Research and Innovation Driving Future Success

Marion Curtis, PhD, Assistant Professor, Immunology, Mayo Clinic • What are the most promising strategies to identify and target tumor-specific antigens using cancer vaccines? What are the most effective vaccine delivery platforms for cancer therapy?

• What role do combination therapies play in overcoming immunosuppression and maximizing the effectiveness of cancer vaccines?

 How can cancer vaccines be successfully integrated into standard of care cancer treatment?

#### **INNOVATIVE APPROACHES**

#### 10:55 An Off-the-Shelf "Personalized" Vaccine? A Flt3L-Primed in situ Vaccination Approach

Thomas Marron, MD, PhD, Director, Early Phase Trials Unit, Tisch Cancer Center; Professor, Medicine, Hematology and Oncology; Professor, Immunology and Immunotherapy, Icahn School of Medicine at Mount Sinai

Most patients fail to respond to checkpoint blockade, partly due to a lack of preexisting anti-tumor immunity, and cancer vaccines aim to induce *de novo* anti-tumor immune responses. *In situ* vaccines—creation of an immune response within a tumor, against tumor antigen—offer the potential for a polyclonal, inherently personalized priming of anti-tumor immunity against optimal targets. FII3L augments DC1 infiltration, further augmenting the efficacy of *in situ* vaccinal effects.

#### 11:25 Modi-2, a Vaccine Targeting Homocitrullinated Self-Epitopes, Stimulates Potent CD4-Mediated Anti-Tumor Responses as a Therapy for Solid Cancers

#### Abdullah Al-Omari, PhD, Scientist, T Cell Vaccine, Scancell Ltd.

Stresses within the tumor microenvironment mediate post-translational modifications of self-proteins. Homocitrullination is the conversion of lysine residues to homocitrulline which can generate neoepitopes and bypass self-tolerance. Modi2, a homocitrullinated peptide-SNAPvax vaccine, stimulates strong Th1 responses and anti-tumor immunity in three different murine tumor models. We propose the Modi-2 vaccine formulation has potential for translation into clinic in several cancer indications.

11:55 Sponsored Presentation (Opportunity Available)

12:25 pm Transition to Lunch

12:35 Luncheon Presentation to be Announced

**DNAnexus** 

1:05 Session Break

#### **CANCER VACCINES IN CLINICAL TRIALS**

#### 1:45 Chairperson's Remarks

Keith Knutson, PhD, Professor, Immunology, Mayo Clinic

#### 1:50 PANEL DISCUSSION: Cancer Vaccine Clinical Trials

Moderator: Thomas Marron, MD, PhD, Director, Early Phase Trials Unit, Tisch Cancer Center; Professor, Medicine, Hematology and Oncology; Professor, Immunology and Immunotherapy, Icahn School of Medicine at Mount Sinai In this panel we will discuss optimal:

- Substrate (peptides, RNA, DNA)
- · Adjuvants (within LNP, payload in vector, innate immune stimuli, cytokines)
- Setting for vaccines (neoadjuvant, adjuvant, metastatic)
- Tumor types (immunogenic vs. non-immunogenic, high vs. low PDL1, high vs. low TMB)
- Class 1 vs. Class 2 epitopes

#### Panelists:

David Anderson, PhD, CSO, Research & Development, VBI Vaccines, Inc. Mark Exley, PhD, CSO, Imvax

Jian Yan, PhD, Vice President, Research & Discovery, Geneos Therapeutics Amanda Huff, PhD, Postdoctoral Research Fellow, Johns Hopkins University School of Medicine





## AUGUST 7-8

## THERAPEUTIC CANCER VACCINES

Innovative Vaccine Strategies to Advance Cancer Immunotherapy

#### 2:20 Randomized Phase IIB Trial of a CMV Vaccine Immunotherapeutic Candidate (VBI-1901) in Recurrent Glioblastomas

David Anderson, PhD, CSO, Research & Development, VBI Vaccines, Inc. Early, interim tumor response data will be presented from a randomized, controlled Phase IIb study evaluating a VLP-based vaccine immunotherapeutic for the treatment of recurrent GBM.

2:50 Sponsored Presentation (Opportunity Available)

3:20 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing

#### STRATEGIES FOR COMBINATIONS

#### 4:00 Personalized Neoantigen-Based DNA Vaccine in Combination with Pembrolizumab for Treating Patients with Advanced Hepatocellular Cancer

Jian Yan, PhD, Vice President, Research & Discovery, Geneos Therapeutics PD-1 inhibitors have modest efficacy as monotherapy in hepatocellular carcinoma. A personalized therapeutic cancer vaccine (PTCV) tailed against neoantigens may enhance responses to PD-1 inhibitors through the induction of anti-tumor immunity. Clinical data highlighting objective responses and vaccine-induced immune responses will be presented. Critical factors for successful translation of personalized therapeutics into the clinic will also be discussed.

#### 4:30 Therapeutic Vaccines for Ovarian Cancer

Keith Knutson, PhD, Professor, Immunology, Mayo Clinic

Immune checkpoint therapies targeting the PD-1/PD-L1 fail in most patients. While there are several reasons for failure, correlative research in many trials suggest that a lack of a pre-existent immune response is in large part responsible. One solution to augmenting pre-existing immunity is with cancer vaccines. This seminar will discuss recent studies evaluating the hypothesis that combination vaccine and immune checkpoint blockade therapy is more effective than either strategy alone.

## 5:00 An Off-the-Shelf Vaccine Targeting Mutant KRAS Neoantigens for Pancreatic Cancer

#### Amanda Huff, PhD, Postdoctoral Research Fellow, Johns Hopkins University School of Medicine

In this Phase I study, we tested the safety and immunogenicity of a peptide-based vaccine targeting the six most common KRAS mutations (G12V, G12A, G12R, G12C, G12D, G13D) in combination with ICIs in patients with resected PDAC. The vaccine induced mutant KRAS-specific Th1 CD4, and cytotoxic CD8 T cells with an acceptable safety profile. We also identified a novel repertoire of mono-, cross-reactive, and public mutant KRAS-specific T cell clonotypes.

#### 5:30 Welcome Reception in the Exhibit Hall with Poster Viewing

#### WOMEN IN SCIENCE MEET-UP

#### 6:10 pm Women in Science Meet-Up IN-PERSON ONLY



Theresa M. LaVallee, PhD, Chief Development Officer, Coherus Biosciences Theresa L. Whiteside, PhD, Professor, Pathology, Immunology & Otolaryngology, UPMC Hillman Cancer Center, University of Pittsburgh Cancer Institute

• Which woman has been an inspiration/mentor to you in your career?

• How can we encourage young women in science?

• What were your biggest work-life balance challenges and what have you done to manage these?

6:30 Close of Day

#### THURSDAY, AUGUST 8

7:30 am Registration and Morning Coffee

#### **ANTIGEN DISCOVERY**

#### 8:00 Chairperson's Remarks

Qiaobing Xu, PhD, Professor, Biomedical Engineering, Tufts University; Founder, Hopewell Therapeutics, Inc.

## 8:05 Computational Approaches to Identifying Targetable Antigens for Personalized Cancer Immunotherapies

Thomas Trolle, PhD, Director, Bioinformatics & AI/ML, Evaxion Biotech A/S While cancer immunotherapies have revolutionized the treatment of cancer patients, there are still many patients who receive no clinical benefit. Several successful clinical trials utilizing personalized neoantigen vaccines have been conducted. However, these trials primarily target patients with high-TMB cancers, such as melanoma, as low-TMB cancers are less likely to have targetable neoantigens. Looking beyond neoantigens has the potential to make personalized cancer vaccines relevant for more patients.

## 8:35 Shining Light on Tumor-Specific Antigenic Dark Matter with Long-Read Sequencing

#### Alexander Rubinsteyn, PhD, Assistant Professor, Computational Medicine and Genetics, University of North Carolina at Chapel Hill

Neoantigen-directed immunotherapies typically rely on short-read exome sequencing to catalog the coding mutations in a cancer's genome. This original sin dooms all downstream filtering and predictive modeling to mostly consider SNVs while discarding the larger mutations which may better distinguish cancer from self. Long-read sequencing, on the other hand, allows us to resolve a broader spectrum of protein altering genomic events which serve as a richer basis for neoantigen discovery.

**9:05 Sponsored Presentation** (Opportunity Available)

#### 9:35 Coffee Break in the Exhibit Hall with Poster Viewing

#### **VACCINE DELIVERY SYSTEMS**

#### 10:15 Engineering Tumor Vaccines Using LNPs

Qiaobing Xu, PhD, Professor, Biomedical Engineering, Tufts University; Founder, Hopewell Therapeutics, Inc.

Here I will discuss the design and development of combinatorial synthetic bioreducible and biodegradable lipid nanoparticles (LNPs) with distinct chemical structures and properties for mRNA delivery with organ and cell selectivity. I will show an example of using this system for delivery of the mRNA cancer vaccine. mRNA cancer vaccine is based on our LNPs elected robust CD8+ T cells response, excellent therapeutic effect, and long-term immune memory.

## 10:45 Combinatorial Approaches towards the Development of mRNA Vaccines and Therapies

#### Allen Jiang, PhD, Postdoctoral Associate, Laboratory of Professor David Liu, Broad Institute of Harvard and MIT

mRNA vaccines and therapies have transformed medical approaches to infectious diseases, genetic disorders, and oncology. We present two key advancements of the field: non-invasive mRNA delivery via stabilized, lung-optimized lipid nanoparticles for pulmonary applications, and the enhancement of immune responses in mRNA vaccines through integration of multiple, novel adjuvants. These studies combined significantly broaden the therapeutic scope of mRNA technology.

#### 11:15 Transition to Plenary Keynote



## INAUGURAL AUGUST 7-8

## THERAPEUTIC CANCER VACCINES

Innovative Vaccine Strategies to Advance Cancer Immunotherapy

#### PLENARY KEYNOTE SESSION

#### 11:20 Organizer's Remarks

Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute



## 11:30 Accelerating Cell and Gene Therapy: Current Challenges and Future Directions

Bruce L. Levine, PhD, Barbara & Edward Netter Professor, Cancer Gene Therapy, Center for Cellular Immunotherapies, University of Pennsylvania

New designs for genetically modified T cells include switches and potency enhancements that will be required for targeting solid tumors. Determining the critical quality attributes, dose, potency, and anticipating pharmacokinetics of a living, dividing drug presents unique challenges. Improving patient access depends not only on scientific progress in targeting, gene modification, and cellular manipulation, but also on meeting automation, engineering, clinical site onboarding, and health policy challenges.

12:00 pm Transition to Lunch



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a New Level Jiyong Zhang, PhD, Vice President Head of Business Development, Business Development, Nona Biosciences

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#### 12:45 The Outlook for Innovation in IO: A VC Perspective

Jakob Dupont, MD, Executive Partner, R&D, Sofinnova Investments

Immuno-oncology treatments from checkpoint inhibitors to cytokine therapies to bispecific antibodies and cell therapies have

made a profound impact on patients' lives. There have been significant IO products successes but also notable failures in the development of these drug candidates. This talk will present a perspective on how IO agents are assessed by VCs and what VCs are looking for to create value for patients and investors in IO.

1:15 Close of Therapeutic Cancer Vaccines Conference



#### **3RD ANNUAL**

AUGUST 8-9

## EMERGING TECH FOR IO TARGETING AND DISCOVERY

Unlocking Precision IO: Innovative Tools, Targets, & Solutions

#### THURSDAY, AUGUST 8

#### 10:30 am Registration Open

#### PLENARY KEYNOTE SESSION

#### 11:20 Organizer's Remarks

Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute



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#### 1:15 Transition to Sessions

#### **DISCOVERY AND DESIGN FOR PRECISION IO**

#### 1:25 Chairperson's Opening Remarks

Sean P. Arlauckas, PhD, Associate Director, Cell Therapy Platform, Be Biopharma Inc.

## 1:30 Breaking Innate Immune System Tolerance: A Novel Approach to Cancer Immunotherapy

Ethan Shevach, MD, Senior Investigator, Cellular Immunology, Laboratory of Immune System Biology, NIAID, NIH

Checkpoint blockade reverses the inhibitory pathways manifest by anti-tumor effector cells. Leukocyte-Ig-like receptors (LILRs) are immunomodulatory receptors which are expressed on cells of the innate immune system and bind to a determinant on HLA. Pan-HLA-mAbs block the binding of LILRs, don't block TCR recognition, activate dysfunctional NK cells from human cancers, and enhance tumor immunity in humanized mice. HLA/LILR interactions represent a target for the treatment of cancers in humans.

#### 2:00 Uncovering Heterogeneity in Specific Immune Cell Populations in the Tumor Microenvironment

Shahin Aslam, Associate Principal Scientist, Merck

This study explores the diversity within specific cell populations residing in the tumor microenvironment. Using advanced techniques, we identify distinct subgroups within these cells, shedding light on their varying functions and potential implications for cancer immunotherapy. Our findings underscore the complexity of immune responses within tumors and highlight the importance of understanding heterogeneity for developing targeted therapeutic strategies.

#### 2:30 PHC Solutions in Cell and Gene Therapy

Tia Harmon, Technical Product Sales Specialist, PHC Corporation of North America

Metabolism is the key activity by which individual cells process nutrients and is closely associated with cell proliferation and differentiation. In the fields of stem cell research, immunotherapy, and cell processing, the understanding of metabolic mechanisms is crucial. To meet this need, PHC Corporation will launch a continuous metabolic analyzer, LiCellMo, which achieves real-time monitoring of the metabolic condition of living cells, and driving new insights into metabolic research.

3:00 Refreshment Break in the Exhibit Hall with Poster Viewing

#### **SPEED-NETWORKING**

## 3:20 pm How Many New Contacts Can You Make? IN-PERSON ONLY



Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute Virginia Maxwell, Senior Associate Producer, Cambridge Healthtech Institute Join us for a dynamic speed networking session at the IO Summit. Make quick and impactful connections! Be yourself, share your background,

DHCD

business cards (or LinkedIns), and connect with potential collaborators in a fun and focused environment. Briefly summarize your research in one minute and get ready to meet fellow attendees who share your interests. We'll provide the space, timers, and exciting group of researchers to make introductions a breeze.

#### 3:40 Epigenetically Suppressed Tumor Cell Intrinsic STING Promotes Tumor Immune Escape

Jian Cao, PhD, Assistant Professor, Pathology, Rutgers Cancer Institute STING activation for induced anti-tumor immunity is an attractive approach but shows limited efficacy in the clinic. The epigenetic silencing of STING in many tumors suggests that STING silencing contributes to immune escape and may limit STING agonists applications. Here we use a MC38 and CT26 mouse model to show STING loss accelerates tumor growth. KDM5 inhibitors activate STING expression in mouse cancers and suppress growth in a STING-dependent manner.

#### 4:10 STING-Driven Activation of T Cells for the Adoptive Cell Therapy of Cancer

#### Lionel J. Apetoh, PhD, Professor, Microbiology & Immunology, Indiana University

Adoptive cell therapy (ACT) shows promise against some cancers, but limitations exist. We explore how stimulating a cellular pathway called STING can enhance ACT. This approach may improve T cell function within the tumor environment, leading to better infiltration, persistence, and ultimately, tumor cell-killing.







#### **3RD ANNUAL**

AUGUST 8-9

## EMERGING TECH FOR IO TARGETING AND DISCOVERY

Unlocking Precision IO: Innovative Tools, Targets, & Solutions

#### 4:40 Development of *ex vivo* Precision Gene-Engineered B Cell-Medicines That Produce Highly Active and Sustained Levels of Transgenic Anti-Tumor Biologics

Sean P. Arlauckas, PhD, Associate Director, Cell Therapy Platform, Be Biopharma Inc.

BiTEs are highly effective in the treatment of relapsed/refractory ALL. However, the short half-life of BiTEs necessitates continuous intravenous administration at high doses for four-week increments. To overcome these pharmacokinetic shortcomings, we developed a method to engineer plasma cell precursors to continuously secrete transgenic biologics. Plasma cells were chosen for their high antibody production capacity and long-term survival, making them a highly attractive cell-based platform for continuous BiTE delivery.

#### 5:10 Close of Day

#### 5:15 Dinner Short Course Registration

#### 5:30 Dinner Short Courses\*

Recommended Short Course: SC2: Optimizing Solid Tumor Targeting and Penetration \*Separate registration required. See Short Courses page for details.

#### FRIDAY, AUGUST 9

#### 7:30 am Registration Open

#### **BREAKFAST BREAKOUT DISCUSSIONS**

#### 8:00 Breakfast Breakout Discussions

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 Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

#### IN-PERSON BREAKOUT TABLE 4: Leveraging Biomarker Technologies for Understanding PD-1 Innate and Adaptive Resistance to Inform New Targets and New Combinations.

Theresa M. LaVallee, PhD, Chief Development Officer, Coherus Biosciences • Approaches to characterize PD-1 resistance

· Applications of PD-1 resistance characterization for target discovery

Uncovering novel and next-gen combination treatment approaches through PD-1 findings

#### IN-PERSON BREAKOUT TABLE 5: Next-Gen Tech for Improved IO Outcomes Through TAMs

Nir Chetrit, PhD, Associate Researcher, Weill Cornell Medicine

- Modulating the tumor-supporting functions of TAMs: current approaches & challenges
- Novel strategies and technologies to overcome limitations of TAM reprogramming

· Scalable TME models and platforms for high-throughput discovery

#### COMPUTATIONAL TOOLS AND ML-DRIVEN APPROACHES

#### 9:00 Chairperson's Remarks

Yuguo Leo Lei, PhD, Associate Professor, Biomedical Engineering, Pennsylvania State University

9:05 Utilizing CRISPR Screening for Novel Target Discovery Nir Chetrit, PhD, Associate Researcher, Weill Cornell Medicine Immunotherapies are a transformative force in clinical oncology but are profoundly hindered by the accumulation of immunosuppressive tumor-associated macrophages (TAMs). This limitation highlights a therapeutic potential, but modulating their tumorsupporting functions has proved exceptionally difficult. We performed a CRISPR screen in TAMs and identified targets that reprogram TAMs into immunostimulatory macrophages. Macrophage reprogramming leads to the abrogation of established tumors, paving an actionable roadmap for innate immunotherapy in cancer patients.

#### 9:35 Re-Imaging Precision Oncology through Deep Learning-Enabled Analysis of Histopathology

Albert Kim, Assistant Professor, Harvard Medical School; Assistant Physician, Massachusetts General Hospital Cancer Center

Tumor and immune phenotypes mediate therapeutic efficacy for most solid tumors. However, there is not a widely available method to measure immune phenotypes for each patient's tumor. Here, we use deep learning to quantify expression of ten transcriptional signatures from the H&E slide of primary breast tumors. Our efforts illustrate the potential of computational H&E biomarkers that reflect facets of the TME, which hold promise for augmenting precision oncology.

#### 10:05 Predicting Therapy Outcomes with Autoantibody Sengenics Biomarkers in Melanoma

Iman Osman, MD, Assoc Dean & Professor; Dir NYU Melanoma SPORE, Medicine (Oncology) and Urology, NYU Grossman School of Medicine Predicting outcomes in cancer treatment is crucial for optimizing therapeutic strategies. This presentation explores profiling autoantibodies using Sengenics custom protein microarrays to identify biomarker signatures predictive of treatment response and toxicity in melanoma patients. This approach has shown promising results, holding great potential to personalize cancer therapy for more effective and safer treatments for melanoma and other types of cancers.

## 10:35 Coffee Break in the Exhibit Hall with Last Chance for Poster Viewing

#### **ENHANCING TARGETING AND DELIVERY**

#### 11:20 Ramifications of Tethering T Cell-Activating Cytokines to the Surface of Tumor Cells

John B. Mumm, PhD, Founder & CEO, Deka Biosciences

The combination of IL-2, IL-10 and EGFR (DK210 (EGFR)) binds to T cells via IL-2 and IL-10 receptors, and to the tumor cell via EGFR. Evaluation of the DK210 (EGFR) structure suggests the cytokines are oriented on the opposite sides of the molecule from the anti-EGFR CDRs. DK210 (EGFR) therefore enhances T cell avidity for tumor cells and is clustered in the T cell synapse, enhancing T cell cytolytic function.

## 11:50 Precision-Guided Bicycle IO Therapeutics for the Treatment of Cancer

Philip E. Brandish, PhD, Senior Vice President, Immuno-Oncology, Bicycle Therapeutics

Small constrained bicyclic peptides have PK and PD properties that are optimal for targeted delivery of toxins, radionuclides, or immune agonists for the treatment of cancer. This presentation will highlight the application of the Bicycle technology to anti-cancer immunity, in particular via the activating receptors CD137 and NKp46.



#### 12:20 pm KEYNOTE PRESENTATION: Lipid-

Mediated Intracellular Delivery of Recombinant bioPROTACs for the Rapid Degradation of Undruggable Proteins

Andrew Tsourkas, PhD, Co-Director, Center for Targeted Therapeutics and Translational Nanomedicine; Professor,

**Bioengineering, University of Pennsylvania** A modular approach was developed that enables the efficient delivery of antibodies and proteins into the cytosol of cells. This approach was used to inhibit numerous cancer-associated proteins, including multidrug resistance Protein 1 and NFkB as well as the previously considered "undruggable" targets, Ras and Myc. More recently, BioPROTACs were delivered intracellularly, enabling the specific degradation of target proteins.



AUGUST 8-9

## EMERGING TECH FOR IO TARGETING AND DISCOVERY

Unlocking Precision IO: Innovative Tools, Targets, & Solutions



#### 12:50 Transition to Lunch

#### 1:00 LUNCHEON PRESENTATION: Advancing Immune-Targeted Cancer Therapies: Leveraging Human Primary Cell *in vitro* Assays



Human primary cell *in vitro* assays play a crucial role in evaluating immune-targeted cancer therapies. Our team has designed a diverse suite of platforms that utilize primary immune cells—T cells, macrophages, NK cells, B cells, neutrophils, and dendritic cells—to assess candidate therapies within the dynamic context of the TME. By integrating these platforms with our novel dual-inducible expression system, we can comprehensively elucidate a therapeutic's mechanism-of-action and safety profile.

#### 1:30 Session Break

#### TOOLS FOR BRIDGING THE GAP: FROM BENCH TO BEDSIDE

#### 2:10 Chairperson's Remarks

Sruthi Ravindranathan, PhD, Senior Scientist, Cellular Immunology, Coherus Biosciences

#### 2:15 Scalable Microbioreactors for Cell and Virus Production

Yuguo Leo Lei, PhD, Associate Professor, Biomedical Engineering, Pennsylvania State University

Culturing cells at large scales remains challenging. We here present a microbioreactor to address this challenge. Cells are cultured in microscale alginate hydrogel tubes (AlgTubes). AlgTubes offer large improvements in cell viability, growth, yield, culture consistency, and scalability over current bioreactors. Cells have high viability, growth rate (3000-fold/passage), and yield (~5x10^8 cells/mL). AlgTubes significantly reduce the culture volume and time-and-production cost, making large-scale cell production feasible.

#### 2:45 Casdozokitug, a Potent and Selective Anti-IL-27 Antibody That Has Demonstrated Clinical Activity in Overcoming PD-1 Resistance and Tumor Immune Suppression in Cancer Patients

Sruthi Ravindranathan, PhD, Senior Scientist, Cellular Immunology, Coherus Biosciences

IL-27, a heterodimeric cytokine expressed by macrophages and myeloid cells, regulates the intensity and duration of immune responses in several pathological conditions, including cancer. Upregulation of IL-27 promotes tumor growth and progression in preclinical models, and is implicated in resistance to PD-1 inhibitors. Casdozokitug is a potent and selective anti-IL-27 antibody that has demonstrated immune activation and single-agent tumor response in Phase 1 clinical trials.

#### 3:15 Presentation to be Announced

#### 3:45 PANEL DISCUSSION: Putting Patients First: Building Sustainable Models for IO Development

Moderator: Philip E. Brandish, PhD, Senior Vice President, Immuno-Oncology, Bicycle Therapeutics

· How can we improve collaboration between manufacturing teams and the clinic?

Balancing affordability, quality, and throughput

Patient-centric models for IO development: managing patient needs against
manufacturing constraints

Panelists:

Yuguo Leo Lei, PhD, Associate Professor, Biomedical Engineering, Pennsylvania State University

Sruthi Ravindranathan, PhD, Senior Scientist, Cellular Immunology, Coherus Biosciences

#### 4:15 Conference Wrap-Up

4:25 Close of Summit





#### 3RD ANNUAL

AUGUST 8-9

## EMERGING CELL-BASED IMMUNOTHERAPIES

Breakthroughs in Cell Therapy & Solid Tumors

#### THURSDAY, AUGUST 8

#### 10:30 am Registration Open

#### PLENARY KEYNOTE SESSION

#### 11:20 Organizer's Remarks

Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute



#### **11:30 Accelerating Cell and Gene Therapy: Current Challenges and Future Directions** *Bruce L. Levine, PhD, Barbara & Edward Netter*

Professor, Cancer Gene Therapy, Center for Cellular Immunotherapies, University of Pennsylvania

New designs for genetically modified T cells include switches and potency enhancements that will be required for targeting solid tumors. Determining the critical quality attributes, dose, potency, and anticipating pharmacokinetics of a living, dividing drug presents unique challenges. Improving patient access depends not only on scientific progress in targeting, gene modification, and cellular manipulation, but also on meeting automation, engineering, clinical site onboarding, and health policy challenges.

12:00 pm Transition to Lunch



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#### 1:15 Transition to Sessions

#### MODULATIONS FOR POTENT AND PERSISTENT IMMUNE EFFECTORS

#### 1:25 Chairperson's Opening Remarks

An-Ping Chen, PhD, Associate Director, R&D, Cytovia Therapeutics

#### 1:30 TALEN-Based Platform for Generation of Gene-Edited iPSC-Derived Natural Killer Cells with Improved Functions

An-Ping Chen, PhD, Associate Director, R&D, Cytovia Therapeutics The iPSC-derived natural killer cells showed great promise for treating cancers. Here, the efficiency and off-target effects of candidate TALENs in iPSCs were analyzed before use. The IL15<sup>+/+</sup>/TGFbR2<sup>-/-</sup> dual-edited iPSCs kept their pluripotency, exhibited normal morphology and karyotype, and were able to differentiate and expand into NK cells with high efficiency. These dual-edited iNK cells showed enhanced persistence without exogenous cytokines and are resistant to suppressive TGFß signaling.

#### 2:00 Combined PD-L1/TGFβ Blockade Allows Expansion and Differentiation of Stem Cell–Like CD8 T Cells in Immune-Excluded Tumors

## Alessandra Castiglioni, PhD, Scientific Manager, Cancer Immunology, Genentech Inc.

Previous research indicates the necessity of attenuating PD-L1 and TGFß signaling to trigger efficacious anti-tumor responses. Our study reveals that TGFß and PD-L1 restrict expansion of stem cell–like CD8 T cells (TSCL), blocking both expanded TSCL and enhanced motility and accumulation of IFNghi cells—transforming the tumor ecosystem to be broadly immune-supportive—and underlying the role of TGFß and PD-L1 in maintaining intratumoral CD8 T cells in a dysfunctional state.

2:30 Sponsored Presentation (Opportunity Available)

#### 3:00 Refreshment Break in the Exhibit Hall with Poster Viewing

#### SPEED-NETWORKING

## 3:20 pm How Many New Contacts Can You Make? IN-PERSON ONLY



Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute Virginia Maxwell, Senior Associate Producer, Cambridge Healthtech Institute Join us for a dynamic speed networking session at the IO Summit. Make quick and impactful connections! Be yourself, share your background,

business cards (or LinkedIns), and connect with potential collaborators in a fun and focused environment. Briefly summarize your research in one minute and get ready to meet fellow attendees who share your interests. We'll provide the space, timers, and exciting group of researchers to make introductions a breeze.

#### 3:40 An Autologous Process Generates Genetically Engineered T Cells with Enriched T Memory Stem Cells and Improved Quality Attributes

Yijun Liu, PhD, Associate Director, Cell Biology, Kite Pharma

An autologous process is developed to generate juvenile CAR T cells in high purity, independent of the variations from incoming leukapheresis. It is demonstrated that not only do juvenile CAR T cells have superior metabolic fitness, but the juvenile feature of T cells also contributes to several product quality attributes, including a higher transduction efficiency, an improved CAR T cell yield, and better T cell proliferation with antigen stimulation.

#### 4:00 Improving Efficacy and Minimizing Safety Risks of TIL Cell Therapy by Rational Engineering of TIL

Madan H. Jagasia, MS, Chief Executive Officer, R&D, Obsidian Therapeutics OBX-115 engineered TIL cell therapy utilizes cytoDRiVE® platform to enable regulation of functional membrane-bound IL15 by reversibly modulating protein stability, enabling a lower dose of lymphodepletion than conventional TIL therapy, obviating the need for IL2, and allowing regulation of antigen-reactive TIL expansion. In a first-in-human study, OBX-115 has produced promising response rates in patients with immune checkpoint inhibitor-refractory advanced melanoma, without any dose-limiting toxicities or Gr 4 treatment-emergent non-hematologic toxicity.

#### **BREAKTHROUGHS IN SOLID TUMOR TARGETING**

#### 4:20 Utilizing Tumor-Reactive-Selected CD8+ TILs for the Treatment of Solid Tumors

Colin Thalhofer, PhD, Director of Research and Development, AgonOx, Inc.





## **EMERGING CELL-BASED IMMUNOTHERAPIES**

Breakthroughs in Cell Therapy & Solid Tumors

Tumor-reactive CD8+ T cells are predominantly found in the tumor microenvironment with an exhausted phenotype. We sort CD8+ TIL that coexpress CD39 and CD103, and expand these cells from thousands to billions to generate adoptive T cell products that are highly enriched for cells that can recognize and kill autologous tumors. We have tested the utility of this approach with coculture assays, PDX models, and in patients with metastatic cancer.

#### 4:40 Engineered Tumor-Infiltrating Lymphocytes (eTIL) for the Treatment of Solid Tumors

**3RD ANNUAL** 

*Karrie Wong, PhD, Director Cell Therapy, Cell Therapy, KSQ Therapeutics Inc.* This research explores modifying a patient's tumor-infiltrating lymphocytes (TILs) to enhance their ability to fight solid tumors. This approach holds promise for a more targeted and effective immunotherapy, potentially offering a new weapon against a wide range of cancers.

#### 5:10 Close of Day

#### 5:15 Dinner Short Course Registration

#### 5:30 Dinner Short Courses\*

Recommended Short Course:

SC1: In vitro Assays for Immuno-Oncology Candidate Selection and Optimization \*Separate registration required. See Short Courses page for details.

#### FRIDAY, AUGUST 9

#### 7:30 am Registration Open

#### **BREAKFAST BREAKOUT DISCUSSIONS**

#### 8:00 Breakfast Breakout Discussions

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 Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

#### IN-PERSON BREAKOUT TABLE 6: Improving Safety to Expand Patient Eligibility for TIL Cell Therapy

Madan H. Jagasia, MS, Chief Executive Officer, R&D, Obsidian Therapeutics • Currently available non-engineered TIL cell therapy requires use of high-dose IL2, which has well-described high-grade toxicity that limits patient eligibility

Novel approaches are needed to improve the safety of TIL cell therapy to enable a broader patient population to benefit

Discussion will focus around existing approaches to improve safety as well as potential avenues to explore in future trials

#### IN-PERSON BREAKOUT TABLE 7: NK Cells: Challenges, Breakthroughs, and Future Directions

Nicholas A Zorko, PhD, Assistant Professor, Hematology & Oncology &

- Transplant, University Of Minnesota Twin Cities
- Challenges with NK cell therapy development
- Pros and cons of NK approaches compared to other cell-based therapeutics
- $\boldsymbol{\cdot}$  Applications of NK therapies to solid tumor indications
- Future directions of NK therapies

#### **BREAKTHROUGHS IN SOLID TUMOR TARGETING**

#### 9:00 Chairperson's Remarks

Karrie Wong, PhD, Director Cell Therapy, Cell Therapy, KSQ Therapeutics Inc.

## 9:05 NK-Cell-Mediated Targeting of Various Solid Tumors Using a B7-H3 Tri-Specific Killer Engager *in vitro* and *in vivo*

Nicholas A Zorko, PhD, Assistant Professor, Hematology & Oncology & Transplant, University Of Minnesota Twin Cities

In this presentation we discuss a molecule (TriKE) to link natural killer (NK) cells to cancer cells expressing B7-H3. This molecule activates and expands NK cells, killing B7-H3 positive cancer cells in lab tests and shrinking tumors in mice.

#### 9:35 Lymph Node-Targeted Vaccine-Boosting of TCR T Cell Therapy Enhances Antitumor Function and Eradicates Solid Tumors

Peter C. DeMuth, PhD, CSO, Elicio Therapeutics

This research investigates a new strategy for treating solid tumors. It combines therapy using TCR T cells with a vaccine that targets lymph nodes. The study explores how this approach improves the effectiveness of T cell therapy against cancer.

10:05 Sponsored Presentation (Opportunity Available)

## 10:35 Coffee Break in the Exhibit Hall with Last Chance for Poster Viewing

#### 11:20 Novel Engineering Approaches for Gamma/Delta T Cell Therapies in Hematologic and Solid Cancers

Lawrence Lamb, Jr., PhD, Executive Vice President & CSO, IN8Bio Gamma delta T cells, a lymphocyte population that bridges the innate and adaptive immune systems, are first responders to malignant disease. As such, they exercise broad MHC-unrestricted recognition of stress receptors not generally present on healthy tissues. These properties have enabled gamma delta T cell–specific engineering approaches to improve their natural anti-tumor functions. We present the biologic rationale for gamma delta T cell–specific engineering and accompanying clinical and translational findings.

#### CELL THERAPY OPTIMIZATION: FROM SCALE-UP SOLUTIONS TO CLINIC SUCCESS

## 11:50 Analytical Development Support of Product Characterization for Autologous TCR-Engineered T Cell Therapies

Joseph M. Lee, PhD, Senior Director, Product Sciences, Affini-T Therapeutics Immune cell-based therapeutics are rapidly evolving to additionally target solid tumors. However, with promising new medicines entering into the clinic, there is also a greater need to address the challenges associated with drug product characterization. This presentation will bring to light some of the regulatory requirements and challenges associated with establishing an analytical control strategy supporting drug product manufacture.

#### 12:10 pm The Unique Challenges of Translating ProtoNK Therapies

Allen Qiang Feng, PhD, Founder and CSO, HebeCell Corp.

Human pluripotent stem cells (PSCs) offer unlimited cell source for cell therapies. Major challenges are (1) complexity of bioprocessing, and (2) outdated regulatory guidelines. HebeCell's proprietary protoNK platform is a first-in-class technology enabling large-scale PSC-derived NK cell production. To translate protoNK platform into clinic, we have (1) successfully established internal manufacturing capability, and (2) we are working towards the 1st IND using protoNK to treat pulmonary metastasis of Ewing sarcoma.

#### 12:30 Intensification of iPSC GdT/NK Product Manufacturing for IO

Yu Qian, PhD, Senior Scientist & Analytical Lead, Cellular Product Development, Takeda Pharmaceuticals Inc.

Large-scale manufacturing remains a hurdle for many cell therapies, limiting their reach in cancer treatment. Here, we discuss strategies to intensify the production of specific immunotherapy products. We apply this in the context of product gamma-delta T (GdT) and natural killer (NK) cells derived from induced pluripotent stem cells (iPSCs).

#### 12:50 Transition to Lunch





## EMERGING CELL-BASED IMMUNOTHERAPIES

Breakthroughs in Cell Therapy & Solid Tumors

1:00 Luncheon Presentation (Sponsorship Opportunity Available) or Enjoy Lunch on Your Own

**3RD ANNUAL** 

#### 1:30 Session Break

#### 2:10 Chairperson's Remarks

Ivone Bruno, PhD, Vice President, Preclinical Affairs and Process Development, Cytoimmune Therapeutics

#### 2:15 Overcoming the Immune Barrier in Allogeneic Cell Therapy

Xiaomeng Hu, PhD, Senior Principal Scientist, Sana Biotechnology, Inc. This presentation explores strategies to surmount the immune barrier in allogeneic cell therapy. Addressing challenges of host immune rejection and graft-versus-host disease, it highlights approaches such as immune modulation and genetic engineering to enhance tolerance and efficacy. By overcoming these hurdles, allogeneic cell therapies hold the promise of broader applicability and improved outcomes, propelling the field towards transformative advancements in regenerative medicine.

#### 2:35 High-Throughput Strategies for Scalable CAR NK Cell Manufacturing

Ivone Bruno, PhD, Vice President, Preclinical Affairs and Process Development, Cytoimmune Therapeutics

This research explores high-efficiency methods for large-scale production of CAR NK cells. CAR NK cells are a promising immunotherapy approach, but large-scale manufacturing is a hurdle. This study examines strategies to overcome this bottleneck, paving the way for wider use of CAR NK cell therapies.



#### 2:55 FEATURED PRESENTATION: Robustly

Measuring Repertoire & Potency of Optimally Expanded Gamma-Delta TILs for IO

Michael T. Lotze, Vice Chair Research & Professor, Surgery, University of Pittsburgh

Effectively evaluating gamma-delta tumor-infiltrating lymphocytes (TILs) for immunotherapy (IO) requires reliable methods. This study investigates methods to accurately assess the diversity (repertoire) and effectiveness (potency) of gamma-delta TILs after expansion for use in cancer treatment.

#### 3:25 Translational Science Informing Clinical Development: How Adaptimmune Drives Translational Insights in Commercial Cell Therapy R&D

*Chris Evans, PhD, Vice President, Translational Sciences, Adaptimmune* This talk explores how translational science informs the development of cell therapies. It will examine how researchers bridge the gap between basic research and clinical trials, using Adaptimmune as a case study. This approach helps ensure new cell-based treatments are effectively tested and developed.



#### 3:45 KEYNOTE PRESENTATION: Deciphering and Improving TIL Adoptive Therapy, from Bedside to Bench and Back

George Coukos, MD, PhD, Director, Department of Oncology, Lausanne University Hospital, and Director, Ludwig Institute for Cancer Research Lausanne Branch,

University of Lausanne

4:15 Conference Wrap-Up

4:25 Close of Summit





## INAUGURAL AUGUST 8-9

TUMOR MICROENVIRONMENT Reshaping the TME to Advance Cancer Immunotherapies

#### THURSDAY, AUGUST 8

#### 10:30 am Registration Open

#### PLENARY KEYNOTE SESSION

#### 11:20 Organizer's Remarks

Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute



#### 11:30 Accelerating Cell and Gene Therapy: Current Challenges and Future Directions

Bruce L. Levine, PhD, Barbara & Edward Netter Professor, Cancer Gene Therapy, Center for Cellular Immunotherapies, University of Pennsylvania

New designs for genetically modified T cells include switches and potency enhancements that will be required for targeting solid tumors. Determining the critical quality attributes, dose, potency, and anticipating pharmacokinetics of a living, dividing drug presents unique challenges. Improving patient access depends not only on scientific progress in targeting, gene modification, and cellular manipulation, but also on meeting automation, engineering, clinical site onboarding, and health policy challenges.

12:00 pm Transition to Lunch



#### 12:15 LUNCHEON PRESENTATION: HCAb Harbour Mice Advances

Multispecific, CAR T, and ADC Therapy to a New Level

Jiyong Zhang, PhD, Vice President Head of Business Development, Business Development, Nona Biosciences

HCAb Harbour Mice of Nona Biosciences is the first fully human heavy chain only antibody (HCAb) transgenic mice platform in history. It is optimized, clinically validated with global patent protection. Fully human heavy chain only antibodies have high affinity and have excellent biophysical characteristics. They are the ideal antibody format to generate a multitude of next-generation therapeutic modalities, including bispecific/multispecific antibodies, ADCs, CAR-based, and mRNA therapeutics.



## 12:45 The Outlook for Innovation in IO: A VC Perspective

Jakob Dupont, MD, Executive Partner, R&D, Sofinnova Investments

Immuno-oncology treatments from checkpoint inhibitors to cytokine therapies to bispecific antibodies and cell therapies have made a profound impact on patients' lives. There have been significant IO products successes but also notable failures in the development of these drug candidates. This talk will present a perspective on how IO agents are assessed by VCs and what VCs are looking for to create value for patients and investors in IO.

#### 1:15 Transition to Sessions

#### MODELING THE TUMOR MICROENVIRONMENT

#### 1:25 Chairperson's Remarks

Theresa L. Whiteside, PhD, Professor, Pathology, Immunology & Otolaryngology, UPMC Hillman Cancer Center, University of Pittsburgh Cancer Institute

#### 1:30 Unraveling Pancreatic Tumor Defenses: Inside the Stromal Orchestra with HOST-Factor

Edna (Eti) Cukierman, PhD, Marvin & Concetta Greenberg Chair in Pancreatic Cancer Research; ACS Wilmott Family Professor of Pancreatic Cancer—Tumor Microenvironment Lab, Fox Chase Cancer Center Dive into desmoplasia, the dense "shield" surrounding tumors, with the Cukierman Lab. Their 3D model unveils the hidden "symphony" of fibroblasts and fibroblastic cellgenerated ECM, revealing how these units influence cancer, immune, and other cells. Their key? The Harmonic Output of Stromal Traits, or HOST-Factor, a tool to understand the stromal "score" and rewrite it for treatment. Witness the Cukierman Lab's quest to reorchestrate pancreatic cancer onset and progression!

#### 2:00 Development of a High-Throughput 3D Culture Model of Immune-Excluded Tumor Microenvironments

Joanna Y. Lee, PhD, Principal Scientist, Biochemical & Cellular Pharmacology, Genentech

There is a significant need for therapeutics that drive immune cells into tumors. For drug discovery, this requires high-throughput models of the tumor microenvironment (TME) that recapitulate physiologically-relevant barriers to immune infiltration. Here, we attempt to induce formation of an immune-excluded TME by co-culturing relevant cell types in 3D culture. A high-throughput, human TME model would enable drug screening and identification of new targets broadly applicable to solid tumors.

#### 2:30 Unraveling functionally distinct immunometabolic spatial programs associated with immunotherapy response and resistance

S. Chakra Chennubhotia, Chief of AI, COO, & Co-Founder, PredxBio, Inc. We present a transformational unbiased spatial analytics and explainable AI platform, SpaceIQ<sup>™</sup>, to predict clinical outcomes and capture emergent metabolic programs informing immunotherapy response and resistance. By utilizing *in situ* proteomics and transcriptomics data, SpaceIQ platform discovers functionally distinct immunometabolic spatial programs as microdomains associated with treatment response and resistance. Further investigation of these microdomains within the tumor microenvironment aims to inform and develop more effective treatment strategies.

#### 3:00 Refreshment Break in the Exhibit Hall with Poster Viewing

#### SPEED-NETWORKING

3:20 pm How Many New Contacts Can You Make? IN-PERSON ONLY



Nikki Cerniuk, Conference Producer, Cambridge Innovation Institute Virginia Maxwell, Senior Associate Producer, Cambridge Healthtech Institute Join us for a dynamic speed networking session at the IO Summit. Make quick and impactful connections! Be yourself, share your background,

business cards (or LinkedIns), and connect with potential collaborators in a fun and focused environment. Briefly summarize your research in one minute and get ready to meet fellow attendees who share your interests. We'll provide the space, timers, and exciting group of researchers to make introductions a breeze.

#### **INSIGHTS FROM CLINICAL TRIALS**

#### 3:40 A Phase 1/2 Clinical Trial of KVA12123, an Engineered IgG1 Targeting VISTA, as Monotherapy and in Combination with Pembrolizumab in Patients with Advanced Solid Tumors

Thierry Guillaudeux, PhD, CSO, Kineta, Inc.

The VISTA-101 clinical trial is a first-in-human, Phase 1/2 open-label, safety, PK, and pharmacodynamic evaluation of KVA12123, both as monotherapy and in combination with pembrolizumab, in adult patients with advanced solid tumors. KVA12123 is a human IgG1 monoclonal antibody that specifically binds to VISTA at neutral and acidic pHs. It was designed to improve pharmacokinetic characteristics as well as reduce the risk of cytokine release syndrome.

#### 4:10 Regulation of Myeloid Cells to Induce Tertiary Lymphoid Structures in the TME

Elizabeth Evans, PhD, COO & Senior Vice President, Discovery & Translational Medicine, Vaccinex







## TUMOR MICROENVIRONMENT

Reshaping the TME to Advance Cancer Immunotherapies

Efficient immune cell communication in the TME is suppressed upon binding of Semaphorin 4D (SEMA4D) to receptors on myeloid cells to inhibit the migration and maturation of dendritic cells (DC). SEMA4D blocking antibody pepinemab has been reported to improve trafficking of DC and T cells and reduce myeloid suppressor cells. Importantly, new clinical data from two independent trials demonstrates that pepinemab induces the formation of lymphoid structures within treated tumors.

INAUGURAL

## 4:40 Defining the Tumor Microenvironment in the Context of Clinical Trials

Robert Anders, MD, PhD, Associate Professor, Pathology, Johns Hopkins University

Translational research efforts to define the tumor microenvironment and uncover biomarkers in clinical trials samples depends on variables such as trial design, tissue sampling plan, and available technologies. Considerations and examples of these variables will be discussed.

#### 5:10 Close of Day

#### 5:15 Dinner Short Course Registration

#### 5:30 Dinner Short Courses\*

Recommended Short Courses: SC1: In vitro Assays for Immuno-Oncology Candidate Selection and Optimization

SC2: Optimizing Solid Tumor Targeting and Penetration \*Separate registration required. See Short Courses page for details.

#### FRIDAY, AUGUST 9

#### 7:30 am Registration Open

#### **BREAKFAST BREAKOUT DISCUSSIONS**

#### 8:00 Breakfast Breakout Discussions

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 Breakout Discussions page on the conference website for a complete listing of topics and descriptions.

#### IN-PERSON BREAKOUT TABLE 8: Immunosuppression in the Tumor Microenvironment

Thierry Guillaudeux, PhD, CSO, Kineta, Inc.

- What are the major drivers of immunosuppression in the tumor microenvironment?
- What are the strategies to overcome immunosuppression?
- What are the promising new targets?

• Which combination strategies should be considered to restore an effective antitumor immune response?

#### IN-PERSON BREAKOUT TABLE 9: Tumor Microenvironment (TME) Models for Mechanistic Studies

Jason Yu, PhD, Senior Postdoctoral Associate, Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology

- What aspects of the TME require ex vivo modeling?
- What are the challenges in modeling tumor immune responses?
- What are the unique advantages of ex vivo TME models?
- · How do we advance ex vivo TME models for drug discovery and mechanistic studies?

#### TARGETING THE TUMOR MICROENVIRONMENT

#### 9:00 Presentation to be Announced



#### 9:05 KEYNOTE PRESENTATION: Metabolism-

**Based Therapies for Liver Cancer** *M. Celeste Simon, PhD, Scientific Director, The Abramson Family Cancer Research Institute; Arthur H. Rubenstein, MBBCh Professor, Cell and Developmental Biology, University of Pennsylvania Perelman School of Medicine* 

Availability of the essential amino acid methionine affects cellular metabolism and growth, and dietary methionine restriction has been implicated as a cancer therapeutic strategy. Nevertheless, how liver cancer cells respond to methionine deprivation and underlying mechanisms remain unclear. I will present how human liver cancer cells undergo irreversible cell cycle arrest upon methionine deprivation in *vitro*. I will also discuss how metabolic approaches can augment immunotherapy treatments in this disease.

9:35 Delving into the Mechanism of Action of Neoantigen Antibodies to Aid the Development of Highly Effective Combination Strategies Towards More Successful Therapies

Philip Arlen, MD, President & CEO, Precision Biologics

10:05 Sponsored Presentation (Opportunity Available)

10:35 Coffee Break in the Exhibit Hall with Last Chance for Poster Viewing

## 11:20 Reprogramming the Tumor Microenvironment with an Anchored IL-12 Therapy (ANK-101)

#### Robert Tighe, CSO, Ankyra Therapeutics

We have developed a novel therapeutic platform for durably retaining immunostimulatory agents within tumors through complexation with aluminum hydroxide; this retention leads to improved efficacy and safety. Following local delivery of an IL-12 based therapy, known as ANK-101, potent anti-tumor activity is observed with abscopal effects; these effects are associated with profound reprogramming of the tumor microenvironment, leading to activation of both innate and adaptive immunity.

## 11:50 Detoxifying and Improving IL-2 Potency through Combination with IL-10 and Targeting to the TME

John B. Mumm, PhD, Founder & CEO, Deka Biosciences

Deka Biosciences has developed a tumor microenvironment-targeted therapeutic platform that combines highly potent but toxic cytokines with IL-10 to concentrate the cytokines in the TME to improve potency and reduce toxicity. The lead asset that combines IL-2, IL-10 with EGFR targeting (termed DK210 (EGFR)) has been dosed in 28 patients and illustrates toxicological proof of concept, achieving high exposures with no vascular/capillary leak nor cytokine release syndromes.

#### 12:20 pm Deep Tumor and Proteomic Analyses Uncover Novel Biomarkers to Intra-Tumoral TLR9 Agonist—Lessons from a Phase II Trial of Neoadjuvant CpG/PD-1 in Resectable Melanoma

*Diwakar Davar, MD, Associate Professor, Medicine, University of Pittsburgh* Intratumoral TLR9 agonists produce durable responses in PD-1 R/R melanoma. Studying biospecimens from a Phase II neoadjuvant trial of neoadjuvant TLR9/PD-1 with spatial transcriptomics, we identified key biomarkers of response, including intra-tumoral myeloid cells, activated T cells, and pDCs peripherally. Deep proteomics identified a PD biomarker. Our findings support that combined neoadjuvant vidutolimod and nivolumab stimulates a broad antitumor immune response and is associated with distinct baseline gene signatures.

#### 12:50 Transition to Lunch

1:00 Luncheon Presentation (Sponsorship Opportunity Available) or Enjoy Lunch on Your Own

1:30 Session Break





AUGUST 8-9

TUMOR MICROENVIRONMENT Reshaping the TME to Advance Cancer Immunotherapies

#### **OVERCOMING IMMUNOTHERAPY RESISTANCE**

#### 2:10 Chairperson's Remarks

Saad Kenderian, PhD, Assistant Professor, Medicine and Oncology, Mayo Clinic College of Medicine

#### 2:15 Presentation to be Announced

#### 2:45 Cytotoxic PD-L1/PD-L2 Dual-Specific Antibodies Effectively Treat Both Immune "Hot" and "Cold" Cancers

Michael A. Curran, PhD, Founder and SAB Chairman, ImmunoGenesis; Associate Professor, Immunology, MD Anderson Cancer Center

Blockade of the PD-1 immune checkpoint has revolutionized therapy of immuneinfiltrated "hot" tumors but lacks efficacy in "cold" tumors. We developed a dual-specific PD-L1/PD-L2 that provides the equivalent of combined PD-1 and PD-L1 antibody blockade in a single drug. By engineering this antibody to also mediate killing of PD-L1 and PD-L2+ target cells, we found that it could efficiently deplete immune suppressive and T cell exclusionary stroma.

#### 3:15 Overcoming TME-Induced Resistance to CAR T Cell Therapy

Saad Kenderian, PhD, Assistant Professor, Medicine and Oncology, Mayo Clinic College of Medicine

Despite its promising potential, CAR T cell therapy faces challenges due to the tumor microenvironment (TME), which harbors immunosuppressive factors and physical barriers that hinder CAR T cell efficacy. To overcome this resistance, strategies are being developed to enhance CAR T cell fitness, engineer them to resist the TME, and target multiple tumor antigens.

## 3:45 Oncogenic Signatures of Tumor Sensitivity and Resistance to IFN-Gamma

Anna Tocheva, PhD, Assistant Professor, Genetics & Genomic Sciences, Icahn School of Medicine at Mount Sinai

Tumor interferon gamma (IFNg) transcriptional signatures are associated with the efficacy of cancer immunotherapy. Yet, our knowledge as it pertains to cancer cellintrinsic plasticity in response to IFNg in the context of tumor genetic and transcriptional heterogeneity can be summarized as little to none. We leverage >70 patient-derived organoid models and paired primary tumors across different cancers to identify tumorintrinsic molecular signatures of IFNg sensitivity.

4:15 Conference Wrap-Up

4:25 Close of Summit

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