Short Courses*

*Separate registration required.

MONDAY, AUGUST 19 | 12:00 – 3:00 PM

SC1: The Making of Bispecific Antibodies

Roland E. Kontermann, PhD, Professor, Institute of Cell Biology and Immunology, Stuttgart Research Center Systems Biology, University of Stuttgart

Oliver Seifert, PhD, Senior Scientist, Institute of Cell Biology and Immunology, University of Stuttgart

Course Description:

The concept of using bispecific antibodies for tumor therapy has been developed more than 30 years ago, although initially with limited success. New developments in the field of antibody engineering have led to next generation bispecific antibodies and a revival of these molecules for tumor therapy. Currently, more than 100 different bispecific antibody formats have been described, including many IgG and IgG-like molecules but also a plethora of small molecules, and more than 50 bispecific antibodies are currently in clinical trials. The workshop will provide an overview of the various bispecific antibody formats and discuss the advantages and disadvantages for therapeutic applications, including dual-targeting strategies in cancer therapy and the treatment of inflammatory and infectious diseases.

MONDAY, AUGUST 19 | 3:30 – 6:30 PM

SC2: Developability and Manufacturing Considerations for Bispecific Antibodies

Chunlei Wang, PhD, Senior Scientist, Analytical Sciences, AstraZeneca

Matthew Aspelund, PhD, Scientist II, Purification Process Sciences, AstraZeneca

Neil Mody, MSc, Scientist II, Early Stage Formulation Sciences, Dosage Form Design and Development (DFDD), AstraZeneca

Course Description:

Bispecific antibodies are a rapidly growing and clinically validated class of antibodies; however, multiple formats and a tedious candidate selection process such as the development of a cell line, a manufacturing process, or a formulation, are typically carried out for only one candidate and are difficult to scale up or expand to other formats/candidates. This short course focuses on challenges with discovery and development of bispecific antibodies through examining the varied aspects of developability, manufacturing, and analytical considerations to maximize the likelihood of translating a clinical candidate molecule with promising properties at an early stage of drug development into a stable, manufacturable, safe, and efficacious drug.

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MONDAY, AUGUST 19

11:30 am Short Course Registration

12:00 – 3:00 pm SC1: The Making of Bispecific Antibodies

3:30 – 6:30 pm SC2: Developability and Manufacturing Considerations for Bispecific Antibodies
**Separate registration required, please see page 3 for details.*

TUESDAY, AUGUST 20

7:45 am Registration & Morning Coffee

OPENING KEYNOTE SESSION

8:30 Chairperson's Opening Remarks
Roland E. Kontermann, PhD, Professor, Institute of Cell Biology and Immunology, Stuttgart Research Center Systems Biology, University of Stuttgart

8:35 Advances in Immunotherapy: Maximizing T cell Responses with Tumor Antigen Directed Bispecific Antibodies and Co-Stimulation
Maria Karasarides, PhD, Executive Director, ImmunoOncology, Regeneron Pharmaceuticals
Immunotherapy has advanced as an integral cancer treatment modality primarily from the survival outcomes observed from checkpoint inhibition (α-CTLA-4, α-PD-1,α-PD-L1). While the benefits from checkpoint inhibition are evident, long term survival is enjoyed by only a small proportion of cancer patients harboring immune-responsive tumors. In this talk we will (1) review the long term survival outcomes provided by checkpoint inhibition (2) discuss immunotherapy combination strategies and outcomes to date (3) explore potential of achieving maximal T cell responses through the use of tumor antigen directed bispecific antibodies and co-stimulation to address the unmet need remaining for cancer patients with immune-response and non-responsive tumors.

9:05 Unveiling the Strength of Alternative Scaffolds
H. Kaspar Binz, PhD, CEO & Founder, Binz Biotech Consulting
Alternative scaffolds promise the creation of novel biologics with potential beyond that of classical monoclonal antibodies. With safety doubts dispelled with clinical data, we now start to see the technologies to unfold their key strengths. This overview includes a review on key milestones achieved during the establishment of alternative scaffolds, a status quo analysis, as well as an outlook of where the field is heading.

9:35 TriKE-Based Combinatorial Therapy for Pancreatic Ductal Adenocarcinoma
Soldano Ferrone, MD, PhD, Professor in Residence, Surgical Oncology, Surgery, Massachusetts General Hospital, Harvard Medical School
I will describe the use of TriKEs as an effector mechanism for immunotherapy. In these constructs IL-15 has been added to the conventional bispecific NK Cell immune engagers (BiKEs) platform and used to crosslink the scFv fragments derived from the B7-H3-specific mAb 376.96 to a highly modified camelid CD16 (FCγRIII)-specific scFv fragment. The latter binds to NK cells, while the former to PDAC cells. Strategies to enhance the activity of TriKEs will be discussed.

10:05 Networking Coffee Break

ENGINEERING INNOVATIONS FOR BI- AND MULTI-SPECIFIC PLATFORMS

10:35 Chairperson's Remarks
Diego Ellerman, PhD, Principal Scientific Researcher, Genentech

10:40 Bi-Specific Antibodies - Platform Approaches to Rapidly Generate Binder – and Format Variability and New Functionalities
Ulrich Brinkmann, PhD, Expert Scientist, Roche Pharma Research and Early Development, Roche Innovation Center Munich, Penzberg, FRG
I will be discussing three key points in this talk: (1) Platform technology to rapidly generate many binder-format combinations; (2) Format matters – combinations of suitable binders and formats generate the 'best' bsAbs; and (3) New formats – new applications – new functionalities.

11:10 Concept to Clinic: Development of Fc-Containing XmAb® Bispecific Antibodies for Immunotherapy
Umesh S. Muchhal, PhD, Director, Protein Sciences, Xencor, Inc.
We present a robust heterodimeric Fc platform, called the XmAb bispecific platform, engineered for efficient development of bispecific antibodies and Fc fusions of multiple formats. First, we engineer a purification solution for proteins containing a heterodimeric Fc using engineered isoelectric point differences in the Fc region that enable straightforward purification of the heterodimeric species. Then, we combine this purification solution with a novel set of Fc substitutions capable of achieving heterodimer yields over 95% with little change in thermostability. Next, we illustrate the flexibility of our heterodimeric Fc with a case study in which a wide range of tumor-associated antigen × CD3 bispecifics are generated, differing in choice of tumor antigen, affinities for both tumor antigen and CD3, and tumor antigen valency. Finally, we present manufacturing data reinforcing the robustness of the heterodimeric Fc platform at scale.

Sponsored by GenScript Make Research Easy

11:40 Design and Development of Innovative Bispecific Antibodies
Lan Tang, Technical Account Manager, BDBU, GenScript
Major challenges in bispecific antibody development are developability and manufacturing. GenScript proprietary SMAB (single-domain antibody fused to monoclonal antibody) bispecific antibody platform minimizes the immunogenicity and manufacture concerns of current bispecific antibody platforms while enabling bi-valent and multi-valent therapeutics.

12:10 pm Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

12:40 Session Break

1:30 A Novel Platform for the Generation of Multivalent and Multispecific Ig-Like Molecules
Oliver Seifert, PhD, Senior Scientist, Institute of Cell Biology and Immunology, University of Stuttgart
The talk presents data on a novel platform allowing generation of molecules of varying specificity and valency, designated diabody-Ig (Db-Ig). The antigen-binding site of Db-Ig is composed of a diabody in the VH-VL orientation stabilized by fusion to antibody-derived homo- or heterodimerization domains, e.g. CH1/CL or the heavy chain domain 2 of IgE (EHD2) or IgM (MHD2), further fused to an Fc region. Exemplary bispecific molecules will provide proof on concept.

2:00 Multispecific Antibody Development Platform Based on Human Heavy Chain Antibodies
Omid Vafa, PhD, MBA, Chief Business Officer, Teneobio, Inc.
Here, we present an innovative platform for generating fully human heavy chain-only antibodies that have been matured *in vivo*. Our unique approach combines antibody repertoire analysis with immunization of humanized transgenic rats (UniRats) that produce human HCAbs (UniAbs) in response to antigen

challenge. UniRats express UniAbs from large transgenes representing the full human heavy chain V(D)J repertoire, mount robust immune responses to a wide variety of antigens, exhibit diverse V gene usage and generate antigen-specific antibodies with a wide range of characteristics. We demonstrate the capabilities of this platform, including the ability to accelerate the development of next generation bi- and multi-specific antibody therapeutics.

2:30 Networking Refreshment Break

3:00 Engineering Anticalin-Based Bispecifics to Leverage Its Format Flexibility in Immuno-Oncology

Stefan Grüner, PhD, Scientist, Molecular Biology and Protein Engineering, Pieris Pharmaceuticals

Anticalin-based bispecifics are clinically tested biologics containing Anticalin proteins derived from highly stable human protein scaffolds. We will show that the format flexibility of Anticalin proteins can be leveraged to rapidly generate bispecifics with distinct activity profiles. We also present case studies in which rational protein engineering of Anticalin-based bispecifics was used to specifically tune their properties.

3:30 Tetravalent Biepitopic Targeting Enables Intrinsic Antibody Agonism of TNFRSF Members

Yanli Yang, PhD, Senior Scientific Researcher, Antibody Engineering Department, Genentech

Agonism of members of the TNF Receptor Superfamily (TNFRSF) with monoclonal antibodies are of high therapeutic interest due to their role in immune regulation and cell proliferation. A major hurdle for pharmacologic activation of this receptor class is the requirement for high-order clustering, a mechanism that imposes a reliance *in vivo* on Fc receptor-mediated crosslinking. This extrinsic dependence represents a potential limitation of virtually the entire pipeline of agonist TNFRSF antibody drugs, of which none have thus far been approved or reached late stage clinical trials. We show that tetravalent biepitopic targeting enables robust intrinsic antibody agonism for two members of this family, OX40 and DR5, that is superior to extrinsically crosslinked native parental antibodies. Tetravalent biepitopic anti-OX40 engagement co-stimulated OX40low cells, obviated the requirement for CD28 co-signal for T cell activation, and enabled superior pharmacodynamic activity relative to native IgG in a murine vaccination model. This work establishes a proof-of-concept for an engineering approach that addresses a major gap for the therapeutic activation of this important receptor class.

4:00 Problem Solving Roundtable Discussions

5:00 Welcome Reception in the Exhibit Hall with Poster Viewing

6:00 End of Day

WEDNESDAY, AUGUST 21

8:00 am Registration & Morning Coffee

T-CELL ENGAGERS

8:30 Chairperson's Remarks

G. Jonah Rainey, PhD, Vice President, Antibody Therapeutics, Gritstone Oncology

8:35 A Novel T-Cell Engaging Bispecific Antibody Platform: Maximizing Tumor Cell Lysis While Minimizing Cytokine Toxicity and T-Cell Exhaustion

Nathan Trinklein, PhD, Vice President, Discovery Research, Teneobio

Using a unique sequence-based discovery approach along with proprietary transgenic rats, we have created a large collection of fully human anti-CD3 antibodies with diverse T-cell agonist activities. The CD3 antibodies identified by our platform show diverse *in vitro* T-cell activation profiles measured by CD69 upregulation, IL2, and IFNg production. We also generated human domain antibodies targeting a variety of tumor antigens that we combined with our unique CD3 antibodies to create bispecific molecules that mediate redirected T-cell killing of tumor cells. In one particular example, we have created a panel of aCD3:aBCMA bispecific antibodies for the treatment of multiple myeloma that stimulate different levels of T-cell activity. Using a multiple myeloma tumor cell line along with primary human PBMCs, we demonstrate a spectrum of *in vitro* tumor cell killing activity with varied levels of cytokine release using our bispecific molecules with diverse CD3 binding activities. In summary, we have created a T-cell engaging bispecific antibody platform with tuned T-cell agonism that can be used to optimize the therapeutic index for a variety of tumor antigens.

9:05 Factors Influencing Potency and Tumor Selectivity of T-Cell Engaging Bispecific Abs

Diego Ellerman, PhD, Principal Scientific Researcher, Genentech

T-cell redirected cytotoxicity has become a major modality in modern biotherapeutics. Both their potency and tumor selectivity are properties important for an efficacious and safe clinical use. This talk will analyze different factors related to the antigen as well as the bispecific Ab that influence the potency as well as emerging strategies to make T-cell engagers more tumor-selective.

9:35 Enhancing Safety and Efficacy for Bispecific T-Cell Engager (BiTE®) Antibody

Tara Arvedson, PhD, Director, Oncology Research, Amgen

Bispecific T-cell engagers (BiTEs) are a new class of immunotherapeutic molecules intended for the treatment of cancer. These molecules enhance the patient's immune response to tumors by retargeting T-cells to tumor cells. BiTEs are constructed of two single-chain variable fragments (scFv) connected in tandem by a flexible linker. One scFv binds to a T-cell-specific molecule, usually CD3, whereas the second scFv binds to a tumor-associated antigen. This structure and specificity allow a BiTE to physically link a T-cell to a tumor cell, ultimately stimulating T-cell activation, tumor killing and cytokine production. BiTEs have been developed, which target several tumor-associated antigens, for a variety of both hematological and solid tumors. Several BiTEs are currently in clinical trials for their therapeutic efficacy and safety. This talk examines the salient structural and functional features of BiTEs, as well as the current state of their clinical and preclinical development.

10:05 Coffee Break in the Exhibit Hall with Poster Viewing

10:45 How We Approached the Clinical Development of CD20-TCB, a Novel 2:1 Format T-Cell Engaging Bispecific Antibody

Tom Moore, PhD, Project Team Leader, Early Development, Roche

CD20-TCB is a novel 2:1 format T-cell-engaging bispecific antibody which already at suboptimal doses displays promising clinical activity in heavily-pretreated B-NHL. In addition, Gpt has shown clinical proof of principle as an approach to efficiently mitigate CRS. An update on safety and efficacy as well as biomarker data will be presented.

11:15 PANEL DISCUSSION: Challenges and Opportunities of T-Cell Engagers

Moderator: G. Jonah Rainey, PhD, Vice President, Antibody Therapeutics, Gritstone Oncology

Panelists: All Speakers in the Session

- Current challenges and opportunities of developing T-cell engagers
- CD3/TCR aspects in safety, dose management, and efficacy
- Ways to mitigate toxicity

11:45 Sponsored Presentation *(Opportunity Available)*

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12:15 pm Luncheon Presentation: A Donor Dependent *In Vivo* Model for Checkpoint and Bispecific Antibody Related Cytokine Release Syndrome Safety Evaluation

James Keck, PhD, Senior Director, Innovation and Product Development, The Jackson Laboratory

Monoclonal antibodies (mAbs) have shown remarkable efficacy as a cancer immunotherapy treatment. Unfortunately, patients treated with mAbs can develop severe adverse effects, including cytokine release syndrome (CRS), which cannot be reliably detected by either *in vitro* assays with human PBMCs or *in vivo* testing in animal models. We have developed a rapid, sensitive, and reproducible PBMC humanized mouse model for quantitating checkpoint and bispecific inhibitor treatments related CRS. Data utilizing these therapeutics will be presented.

12:45 End of Bispecific Antibody Design

WEDNESDAY, AUGUST 21

1:00 pm Registration

CLINICAL PROGRESS FOR BISPECIFICS AND COMBINATIONS

1:35 Chairperson's Opening Remarks
Rakesh Dixit, PhD, DABT, President & CEO, Bionavigen

1:40 FEATURED PRESENTATION: Introduction and Overview of Bispecific Antibodies in the Clinic: Learnings from Success and Failures
Rakesh Dixit, PhD, DABT, President & CEO, Bionavigen
This talk will provide an introduction and overview of leading bispecific antibodies along with other combinations that are currently in the clinic, including the learnings from successes and failures of bispecific antibodies.

2:10 M7824 (MSB0011359C), a Bifunctional Fusion Protein Targeting PD-L1 and TGF-β in Advanced Solid Tumors
Julius Strauss, MD, Assistant Research Physician, Laboratory of Tumor Immunology and Biology, Center for Cancer Research, NCI, NIH
M7824 is a bifunctional fusion protein targeting PD-L1 and TGF-β. In Phase I/II trials, M7824 has shown evidence of clinical efficacy in a variety of tumor types, including NSCLC, gastric ca, biliary tract ca and HPV associated malignancies.

2:40 ZW49 – A Novel Bispecific Antibody-Drug Conjugate (ADC) Targeting HER2-Expressing Cancers
John Babcook, PhD, Senior Vice President, Discovery Research, Zymeworks
ZW49 is a bispecific anti-HER2 ADC currently being evaluated in a Phase I clinical trial. In preclinical studies, ZW49 demonstrated complete tumor regressions in a panel of high and low HER2-expressing patient-derived xenografts, and promising efficacy in a model of breast cancer brain metastases at exposures tolerated in non-human primates. These results compared favorably when benchmarked against approved and leading HER2 ADCs in clinical development.

3:10 Sponsored Presentation *(Opportunity Available)*

3:25 Refreshment Break in the Exhibit Hall with Poster Viewing

4:05 Leveraging Host Anti-Tumor Immunity through Bispecific DART® Molecule
Paul A. Moore, PhD, Vice President, Cell Biology & Immunology, MacroGenics, Inc.
This presentation will review MacroGenics clinical experience with redirected T-cell killing bispecific DART molecules, and approaches to maximize therapeutic responses through combination with checkpoint inhibitors and/or immune co-stimulators.

4:35 ABL001 (NOV1501): A Novel Bispecific Antibody Targeting VEGF & DLL4 for the Treatment of Solid Tumors
Sang Hoon Lee, PhD, CEO, ABL Bio
To date, all approved antiangiogenic drugs primarily inhibit the VEGF/VEGFR pathway. Delta-like ligand 4 (DLL4) has been identified as a potential drug target in VEGF-independent angiogenesis. A dual blockade of both VEGF and DLL4 could be a promising strategy to overcome anti-VEGF therapy resistance. ABL001 (NOV1501) has been developed as a bispecific antibody to bind and inhibit both DLL4 and VEGF, thereby significantly suppressing tumor angiogenesis. I will report the most recent data for this ongoing Phase 1a study. Phase 1b/2a study is planned in combination of ABL001 with chemotherapy or anti-PD-1 antibody.

5:05 Problem Solving Roundtable Discussions

6:05 End of Day

6:10 Get personal: Fun with your peers and colleagues at the Infamy Bar & Restaurant*
An informal gathering will be held in the Infamy Bar & Restaurant (located in the hotel lobby). We encourage you to turn to your neighbors during this gathering to shake hands, make conversations and get to know each other on a personal level. The best learning and relationship-building experiences are informal! Many surrounding restaurants are within walking distance to continue the conversations over dinner.

****This is not a CHI hosted event. Food and drinks will not be provided by the event organizers.***

THURSDAY, AUGUST 22

8:00 am Morning Coffee

UNDERSTANDING THE BIOLOGY FOR ENHANCED SAFETY AND EFFICACY

8:30 Chairperson's Remarks
Nazzareno Dimasi, PhD, Associate Director, R&D, AstraZeneca Biopharmaceuticals

8:35 KEYNOTE PRESENTATION: Bioassay Development for Bispecific Antibody from an FDA Standpoint
Wen Jin Wu, MD, PhD, Senior Investigator, Office of Biotechnology Products, Center for Drug Evaluation and Research, FDA CDER
Bispecific antibodies are the agents targeting two antigens, such as two receptors expressed on either the same or the different cells, two ligands, or one ligand and one receptor, and have the unique potential to mediate multiple biological effects and may kill the tumor cells more efficiently compared to monoclonal antibodies. Bispecific antibodies Investigational New Drug (IND) submissions have grown enormously in recent years. Therefore, to improve product manufacturing and testing to help ensure availability of high-quality bispecific antibodies during clinical study, it is essential to develop cell-based bioassay(s) that can characterize biological activity, demonstrate mechanism of action, detect structural changes, and function as a quality control release assay. The regulatory issues and the pitfalls in bioassays will be discussed.

9:05 Lessons Learned from the Bis4Ab Platform: From a Bispecific Engineering Concept to Clinical Investigation.
Nazzareno Dimasi, PhD, Associate Director, R&D, AstraZeneca Biopharmaceuticals
Over the past several years, we have generated several bispecific bivalent antibody formats. Amongst those formats, Bis4Ab is the most advanced format we have in clinical investigation. In this presentation, the Bis4Ab engineering design and development are presented. As an example of Bis4Ab, lessons learned during the preclinical and clinical investigation of MEDI3902, which is being investigated in Phase II trials as immunoprophylactic against *Pseudomonas aeruginosa* in mechanistic ventilated subjects are presented.

9:35 Design Meets Biology – Engineering a PD-1/CTLA-4 Bispecific Antibody to Improve Both Safety and Efficacy

Yariv Mazor, PhD, Senior Scientist, Antibody Discovery & Protein Engineering, AstraZeneca Biopharmaceuticals

MEDI5752 is a monovalent bispecific IgG1 antibody (DuetMab), targeting the two clinically validated receptors; PD-1 and CTLA-4. The bispecific antibody introduces novel MOAs that may provide an improved therapeutic index when compared to the two monotherapies and mAb combinations. MEDI5752 is currently being clinically evaluated for safety and efficacy.

10:05 Coffee Break in the Exhibit Hall with Poster Viewing

10:50 Bispecific γδ-T cell Engagers for Cancer Immunotherapy

Paul W.H.I. Parren, PhD, Executive Vice President and Head of R&D, Lava Therapeutics

Bispecific T cell engagers (bs-TCE) are a promising class of immune-oncology agents in targeted cancer immunotherapy. Classical bs-TCE designs consist of a tumor antigen-binding domain combined with a binding domain against the CD3 T-cell receptor-signaling complex. Irrespective of the bispecific antibody format used, CD3-based bs-TCEs have a number of disadvantages, which in part are explained by the fact that they activate all T-cells irrespective of lineage, which associates with serious adverse events as a result of exaggerated T cell activation and cytokine release in some patients, and limited efficacy due to T suppressor cell activation in others. The development of bs-TCEs with increased tumor selectivity to widen the therapeutic window has high potential. Lava Therapeutics' platform is based on the selective recruitment of Vγ9Vδ2 T cells for tumor targeting. This γδ-T cell subset has been shown to display powerful innate anti-tumor immune effector activity with an ability to infiltrate human tumors in which its abundance in tumor-infiltrating lymphocytes has been shown to positively correlate with patient survival. This presentation will discuss a novel class of bsTCEs designed to engage Vγ9Vδ2-T cells for the development of efficacious and safe cancer immunotherapies.

11:20 Developing "Fit-for-Purpose" Bi- and Multi-Specific Biologics to Achieve Desired Functional Outcomes

Tariq Ghayur, PhD, Distinguished Research Fellow, Immunology Discovery, AbbVie

To achieve desired therapeutic outcomes multiple features need to be considered in a therapeutic modality, for example: (i) valency and geometry of target binding domains; (ii) glycosylation profile and (iii) PK. In this talk we will describe our efforts to engineer such functional properties in bi- & multi-specific biologics.

11:50 Sponsored Presentation *(Opportunity Available)*

12:20 pm Enjoy Lunch on Your Own

CASE STUDY OF BISPECIFIC

1:50 Chairperson's Remarks

Paul A. Moore, PhD, Vice President, Cell Biology & Immunology, MacroGenics, Inc.

1:55 A B-body™ Bispecific OX40 Agonist Antibody that Exhibits Superior Activity without Secondary Crosslinking

Bonnie Hammer, PhD, Vice President, Biologic Development, Invenra

OX40 is a costimulatory molecule found on T cells belonging to the tumor necrosis factor receptor superfamily (TNFR). TNFR superfamily members require high-order receptor clustering in order to achieve full activity. Traditional monoclonal antibodies require secondary cross-linking to achieve this high-order receptor clustering. We have developed a biparatopic antibody to OX40 that in the absence of cross-linking meets or exceeds the level of activation of a traditional monoclonal cross-linked antibody and exhibits potent *in vivo* efficacy in a mouse model.

2:25 A Novel Multi-Specific Antibody Targeting PD-L1-Overexpressing Cancers that Stimulates Antigen-Committed CD8+ T Cells Through Concomitant Engagement of 4-1BB

Christian Hess, PhD, Associate Director, Group Leader Protein Engineering, Numab Therapeutics AG

Encouraging pre-clinical results achieved with combined PD-L1/PD-1 and 4-1BB regimens have not yet translated into durable clinical success, due to co-administration of 4-1BB-agonistic antibodies being either intolerable at effective doses or ineffective at all evaluated doses. To eliminate this safety/efficacy tradeoff, we engineered a novel, PD-L1/4-1BB/HSA trispecific scMATCH™3 immunomodulatory drug candidate (NM21-1480) that agonizes 4-1BB conditionally upon PD-L1-binding/-blockade and is equally effective as a αPD-L1 mAb + α4-1BB mAb combination at slowing tumor progression *in vivo*, while being better tolerated.

IMMUNOGENICITY AND CLINICAL PHARMACOLOGY CONSIDERATIONS

2:55 Chairperson's Remarks

Paul A. Moore, PhD, Vice President, Cell Biology & Immunology, MacroGenics, Inc.

3:00 FEATURED PRESENTATION: Clinical Pharmacology Considerations of Bispecific Antibodies

Ping Ji, PhD, Pharmacologist, OCP, FDA

Bispecific antibodies as therapeutic agents are characterized by the ability to bind two different targets, either cell-surface receptors or soluble ligands, on the same or different cell(s). Their PK/PD properties, including their immunogenic potential, are closely related to their structural features such as molecular weight and physicochemical properties and binding affinity to the antigen. This presentation will describe the clinical pharmacology properties of bispecific antibodies and their clinical development strategy. The challenges of bioanalytical assay of bispecific antibodies will also be presented.

3:30 Immunogenicity Assessment of Bispecific Antibody Therapeutics in Clinical Studies

Kate Peng, PhD, Group Leader/Senior Scientist, BioAnalytical Sciences, Genentech

Bispecific mAbs (bsmAbs) are a novel class of mAbs that aim to improve drug efficacy by simultaneously working on two targets. This is a relatively new approach with limited experiences in clinical development. This presentation discusses our strategy for assessing the anti-drug antibody (ADA) responses to the bsmAb and summarizes the characterization results as well as the clinical impact of ADAs on drug exposure and safety.

4:00 End of Bispecific Antibody Pipeline Congress