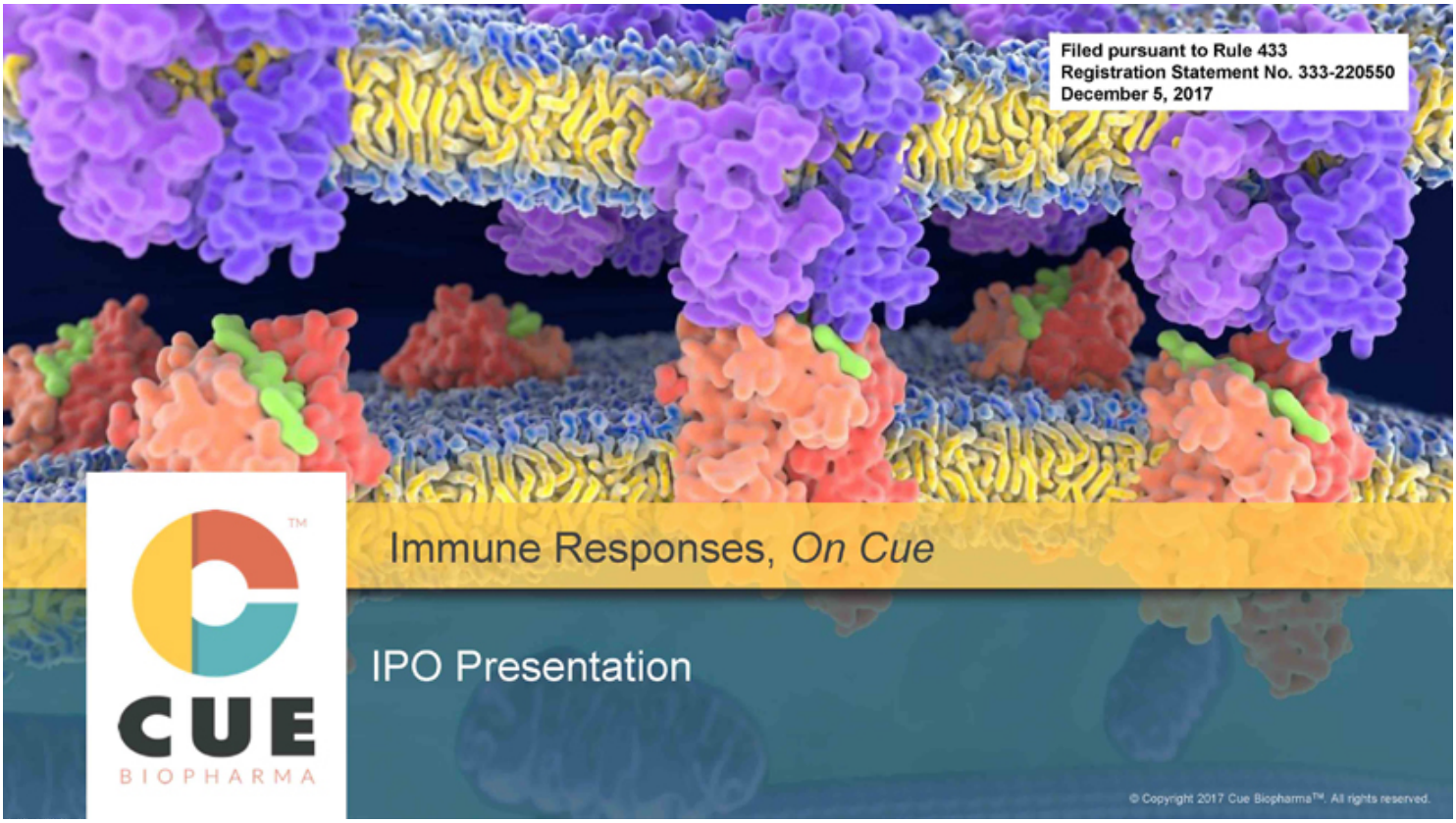
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December 5, 2017
CUE
BIOPHARMA
Immune Responses, *On Cue*
IPO Presentation
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THIS PRESENTATION CONTAINS FORWARD-LOOKING STATEMENTS WHICH ARE BASED ON CERTAIN ASSUMPTIONS AND DESCRIBE OUR FUTURE PLANS, STRATEGIES AND EXPECTATIONS. FORWARD-LOOKING STATEMENTS ARE NEITHER HISTORICAL FACTS NOR ASSURANCES OF FUTURE PERFORMANCE. INSTEAD, THEY ARE BASED ONLY ON OUR CURRENT BELIEFS, EXPECTATIONS AND ASSUMPTIONS REGARDING THE FUTURE OF OUR BUSINESS, FUTURE PLANS AND STRATEGIES, PROJECTIONS, ANTICIPATED EVENTS AND TRENDS, THE ECONOMY AND OTHER FUTURE CONDITIONS. BECAUSE FORWARD-LOOKING STATEMENTS RELATE TO THE FUTURE, THEY ARE SUBJECT TO INHERENT UNCERTAINTIES, RISKS AND CHANGES IN CIRCUMSTANCES THAT ARE DIFFICULT TO PREDICT AND MANY OF WHICH ARE OUTSIDE OF OUR CONTROL. OUR ACTUAL RESULTS AND FINANCIAL CONDITION MAY DIFFER MATERIALLY FROM THOSE INDICATED IN THE FORWARD-LOOKING STATEMENTS. THEREFORE, YOU SHOULD NOT RELY ON ANY OF THESE FORWARD-LOOKING STATEMENTS. IMPORTANT FACTORS THAT COULD CAUSE OUR ACTUAL RESULTS AND FINANCIAL CONDITION TO DIFFER MATERIALLY FROM THOSE INDICATED IN THE FORWARD-LOOKING STATEMENTS INCLUDE, AMONG OTHERS, THE RISKS AND UNCERTAINTIES DESCRIBED IN THE RISK FACTORS AND IN MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS SECTIONS OF THE PROSPECTUS FOR THE OFFERING.

Targeted Immune Modulation: The Future of Immunotherapy

The Cue Biologics™ Platform: A Potentially Disruptive Breakthrough Technology

Selective control of immune responses is key to safer and more effective immunotherapies addressing oncology and autoimmune diseases

Most current approaches globally activate or globally inhibit the immune system

- Most current immuno-oncology therapies do not specifically activate disease-associated T cells and often result in **severe** dose limiting **toxicities** with diminished therapeutic benefit
- Autoimmune therapies may **increase** the occurrence of **cancers and infectious diseases**

Targeted T cell modulation provides several potential advantages

- Increased patient reach through **enhanced efficacy**
- Ability to develop **precision therapeutics for specific diseases**
- **Lowered toxicities** as well as long-term side-effects
- Safer and more effective **combination therapies**

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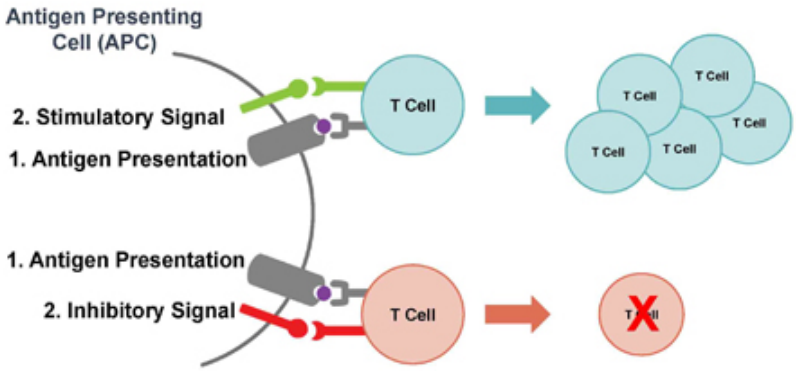
Turning the Immune System On and Off

T cells are responsible for the bulk of the immune response to threats including cancer

APCs target T-cells for expansion or inhibition by means of two signals

1. Antigens presented by MHC molecules provide specificity
2. Stimulatory or Inhibitory signal (mediated by costimulatory receptor-ligand binding)



T cell activation/proliferation to attack tumor, bacterial or virus infected cells

T cell inhibition/ablation to address autoimmune disease

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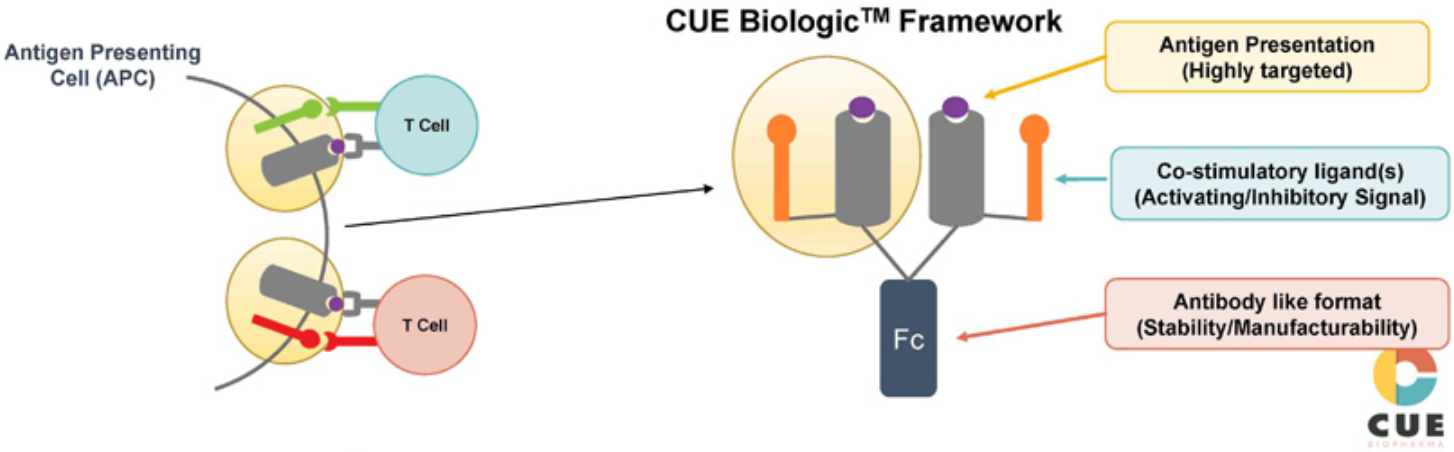
An Engineering Solution to Targeted Immune Modulation

Modular design allows for versatility to address cancer and autoimmune diseases

Cue Biologics™ are designed to mimic the natural APC signaling mechanism

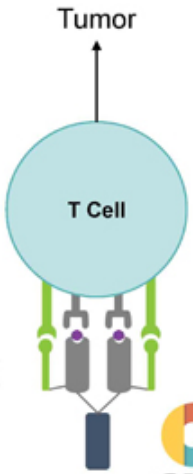
1. Antigens presented by MHC molecules provide specificity
2. Stimulatory or Inhibitory signal (mediated by costimulatory receptor-ligand binding)



CUE Biologics™ for Targeted T-cell Modulation

Broad platform for multiple oncology and autoimmune disease applications

- Biologic design platform to modulate specific T cell population
  - Injectable biologics mimic the natural APC signaling mechanism
  - One building block, multiple drug iterations
- Pre-clinical data demonstrates specific immune response
  - Human translatability via *ex vivo* T cell activity assays
  - Selective T cell expansion and complete responses as a monotherapy
  - Synergizes with checkpoint inhibitors (anti-PD-1)
- Potential to solve important immunotherapy problems
  - Targeted and selective to enhance therapeutic benefit and to limit toxicity
  - Scalable manufacturing and versatility of platform results in potentially broad patient population reach



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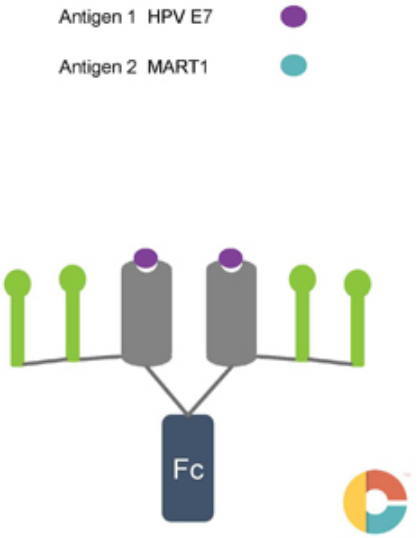
Modular Structure to Rapidly Generate Additional Drugs

Rapid validation for additional disease indications, e.g., multiple cancers

- Expandable platform – develop framework first
  - Different antigens on validated framework creates new drugs
  - Rapid validation for additional disease indications

- Exchangeable peptide drives value creation
  - Once drug framework is clinically validated, provides validation to pipeline
  - Cost-efficiencies and streamline development lowers pipeline development risk
  - Reduced time-to-clinic



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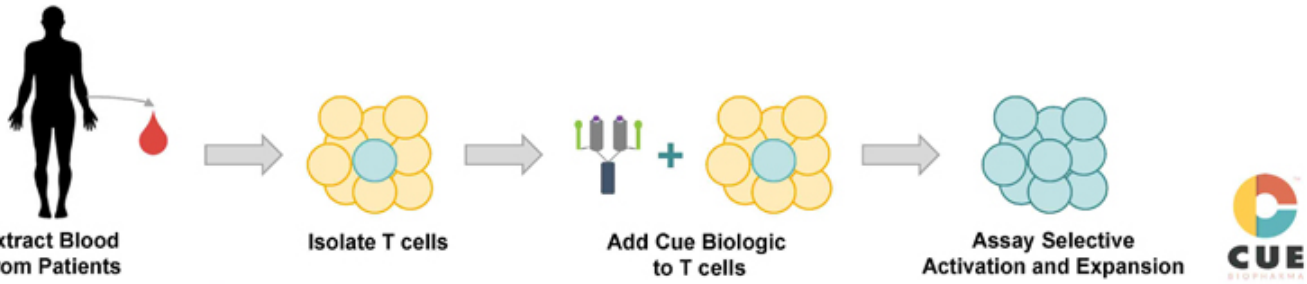
Human Ex Vivo Assays: A Potential Paradigm Shift in Drug Development

Potentially powerful tool for demonstrating preclinical proof of mechanism and proof of concept

Traditional drug discovery efforts are slow and rely heavily on preclinical animal models which are not always predictive of clinical outcomes

Cue Biopharma™ is developing a highly-efficient translational approach to drug discovery

- Drug candidates are screened against patient blood for selective activation (or ablation) of disease associated T cells
- We believe the ability to rapidly assay activity of drug constructs on human T cells can allow for decreased costs, increased productivity and greater insights for clinical trial design



Validating Drug Candidates for Cancer Through Ex Vivo Assays

Potential candidates are assessed by four main metrics prior to selection

Killing

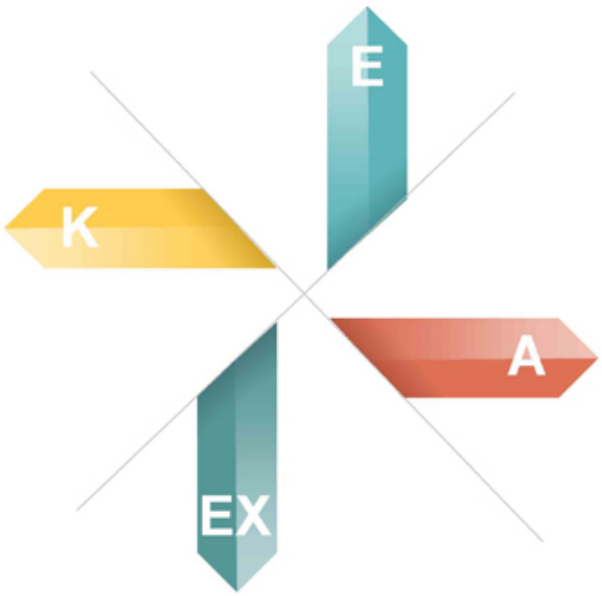
Assay Type: Monitoring markers of degranulation, Specific lysis assay, patient xenograft assay

Clinically Informs: PK/PD model of safety and efficacy.

EXpansion

Assay Type: Drug induced antigen specific cell growth (FACS), Healthy controls and Patient Samples

Clinically Informs: PK/PD model of safety and efficacy.



Engagement

Assay Type: Direct cell binding, Receptor binding

Clinically Informs: Specificity of binding, Receptor occupancy, PK/PD model of safety and efficacy

Activation

Assay Type: Activity assays (pSTAT), Monitoring Surface Molecules (FACS), Cytokine Release (Elispot)

Clinically Informs: PK/PD model of safety and efficacy.

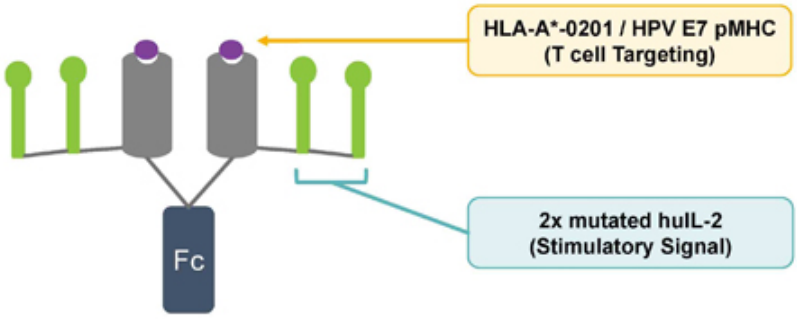
CUE-101 is Exemplary of Our Approach in Oncology

Current lead oncology drug candidate is designed to direct select T cells against HPV+ cancers

Rationale

- HPV+ cancers affect ~25,000 Americans annually
- E7 protein is a tumor specific driver of oncogenesis and the epitope is highly immunogenic
- Therapeutic profile of IL-2 is well characterized and familiar to regulatory agencies and physicians

Therapeutic Design

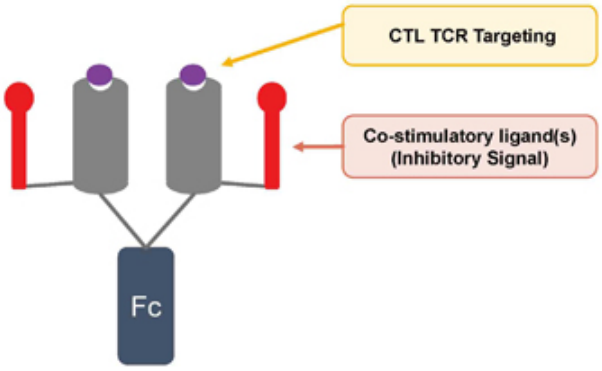


CUE-101

Developing CUE Biologic Frameworks for Autoimmune Diseases

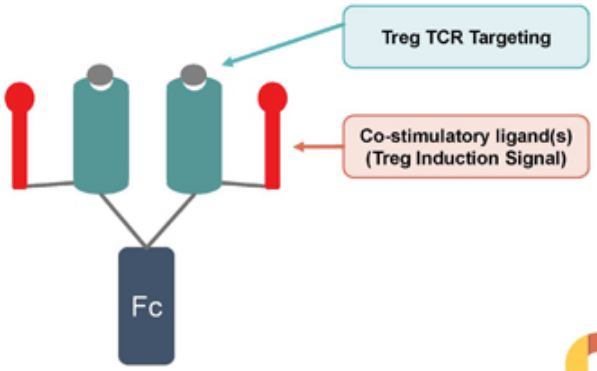
Two potential mechanisms of action

Directly deplete disease associated T cells



CUE Biologics™ MHC Class I

Generate T-regulatory cells (Tregs) to inhibit disease associated T cells



CUE Biologics™ MHC Class II

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Our First Partnership

Speeding Autoimmune Development

Strategic Research Collaboration and License Agreement

Agreement Focused on Development of Next-Generation Biologics to Selectively Modulate T Cell Activity for the Treatment of Autoimmune Diseases

Management Team

Dan Passeri, M.Sc., J.D.
President and CEO

Kenneth Pienta, M.D.
Acting Chief Medical Officer

Ronald D. Seidel III, Ph.D.
Co-Founder and EVP, Head of R&D

Rodolfo J. Chapparo, Ph.D.
Co-Founder and EVP, Head of Immunology

Mary Simcox, Ph.D.
VP of Translational Biology

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Independent Directors and Scientific Advisory Board

Independent Directors

Peter Kiener, Ph.D. – Chairman
Current CSO at Sucampo Pharmaceuticals, Inc. Former CSO of Ambrx Inc., and President and Co-founder of Zyngenia Inc., Also held senior leadership roles at MedImmune LLC, the global biologics arm of AstraZeneca.

Barry Simon, M.D.
President and COO of NantKwest. Formerly held various senior level executive and advisory positions at Roche Labs, F. Hoffmann-La Roche, Connetics Corp., Immunomedics, Immusol, NorthSound Capital, LLC, and HealthPro BioVentures.

Steven McKnight, Ph.D.
Principal Investigator at UT Southwestern Medical Center. Co-founder and Director of Biology at Tularik, Inc., co-founder and board member for Cumbre, Inc., and Peloton Therapeutics.

Scientific Advisory Board

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Professor of Biochemistry and Director of the Institute for Protein Design at the University of Washington.

Jacques Banchereau, Ph.D.
Director of Immunological Sciences at the Jackson Laboratory

Karolina Plaucka, M.D., Ph.D.
Professor of Immunology at the Jackson Laboratory

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The IPO

NASDAQ - CUE

- Between $40-$60MM at $7.50 per share
- Pre-Money Valuation Approximately $80MM based on 10.7MM shares outstanding pre-offering
- Best Effort Offering – Subscription Form and Wire to Escrow Agent
- Begin Trading on NASDAQ approximately 3 days after closing
- Trading Symbol - CUE

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Use of Proceeds

We believe the net proceeds from this offering will be sufficient to allow us to:

- Complete IND-enabling studies for our lead product candidate, file such IND and initiate the Phase I trial for that candidate;
- Identify, optimize and nominate one additional drug candidate for immuno-oncology;
- Optimize drug scaffold for the treatment of autoimmune indications through the generation of T regulatory cells *in vivo*; and
- Continue to advance our drug discovery platform technologies, including funding to proof of concept of viraTope™, our T cell epitope discovery platform.

Driving Value

Key Initiatives for 2018

- Continue development of pipeline of CUE-100 series
- Further development and refinement of *ex vivo* assay capabilities
- Develop proof of concept in auto-immune program with Merck
- Complete IND-enabling studies for our lead product candidate, file IND and initiate Phase 1 trial for that candidate
- Develop additional key partnerships with other pharma companies and key opinion leaders
- Develop strategy with new FDA guidelines to create rapid/efficient path to approval for our CUE Biologics™ platform

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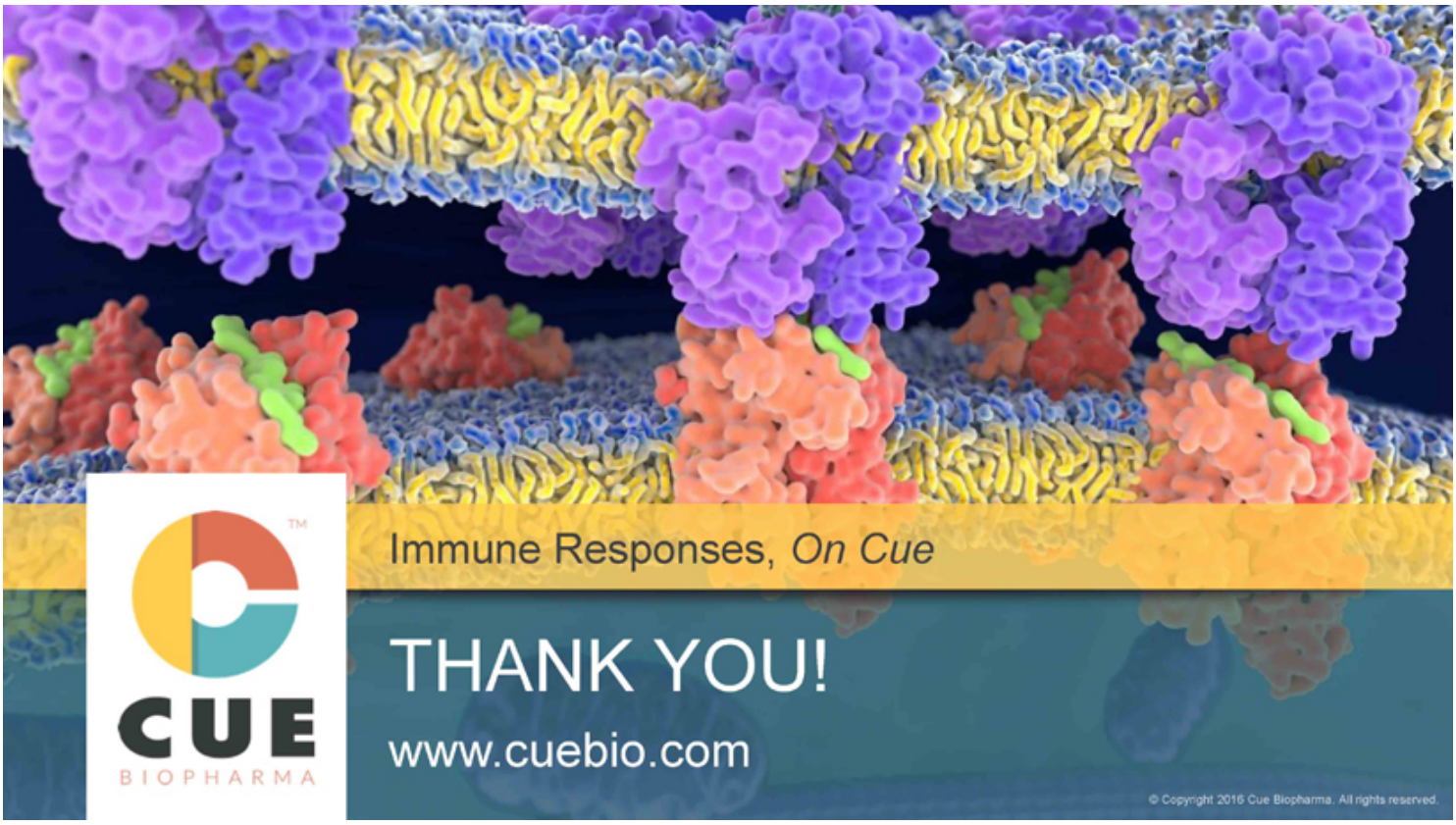
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