Corporate Presentation

Immune Responses, On Cue™

Nasdaq: CUE

July 20, 2020

Forward-Looking Statements

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Corporate Highlights

Disruptive Platform for T Cell Modulation *In Vivo*

Immuno-STAT & Neo-STAT Platforms

- Distinct mechanism of action for selective modulation of disease-relevant T cells directly in a patient's body
- Modular therapeutic frameworks targeting cancer and autoimmune disease
- Industry-standard manufacturing, without need for ex vivo manipulation

Focused Execution Against Platform Validation

- CUE-101 in Phase 1 for R/M HPV+ head and neck cancer
- ❖ Preliminary clinical data presented in 1H20; additional data in 2H20
- Immuno-STAT platform modularity demonstrated with peptides (WT1 and KRAS) and HLA (A02, A11, A24)
- ❖ Preclinical data with CUE-102 (WT1/A02 & A24) presented in 1H20
- Neo-STAT capability enhances R&D efficiency and expands the landscape of clinical utility

Strategic Partnerships to Accelerate Expansion

- LG Chem collaboration to expand IL-2 based CUE-100 series in immuno-oncology
- Merck collaboration to establish proof of mechanism for CUE-300 series Immuno-STAT platform in autoimmune disease
- ❖ Preclinical data with CUE-301 presented in 1Q20

Strong financial position supports key readouts from ongoing CUE-101 clinical study and further expansion of Immuno-STAT platform

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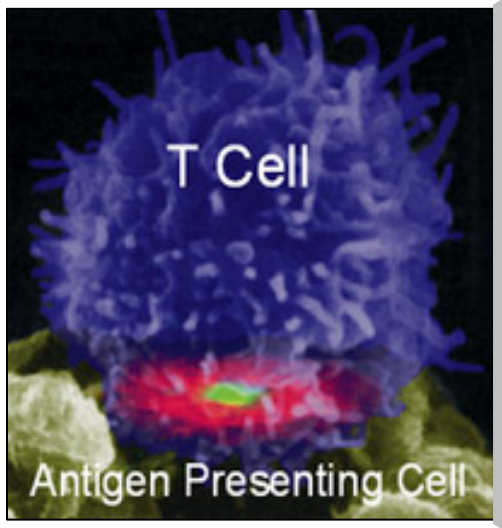
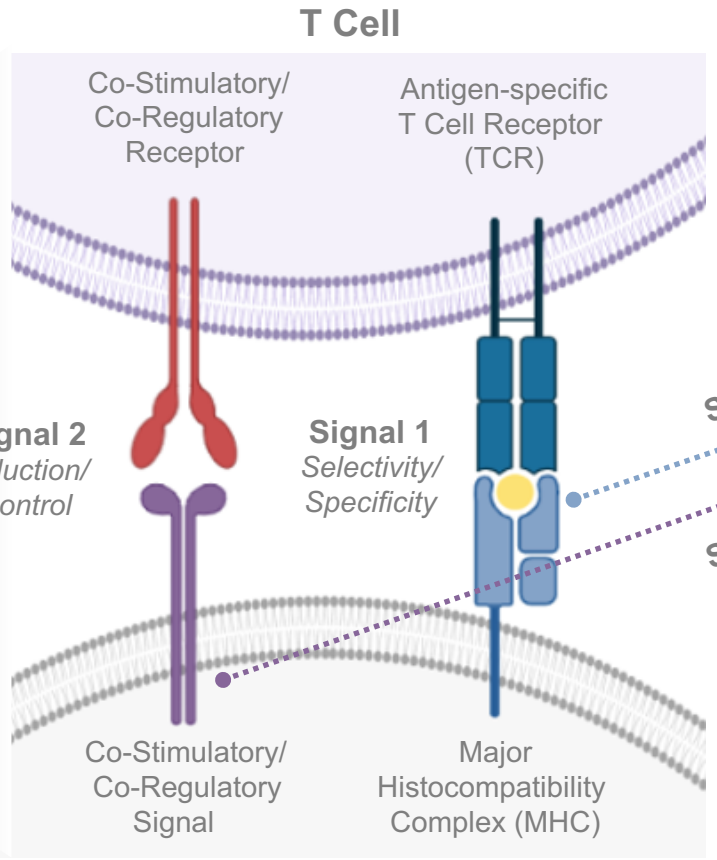
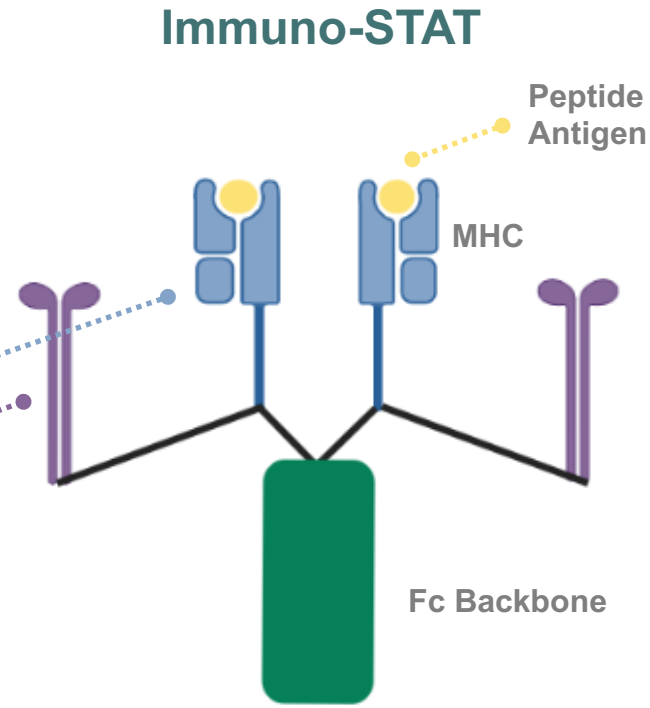
Emulating Nature's Cues to Selectively Modulate T Cells







- **Single molecule**
- **Stable, off-the-shelf**
- **IV or SQ administration**
- **No *ex vivo* manipulation**

Rationally engineered Immuno-STAT biologics selectively target and modulate the activity of disease-relevant T cells

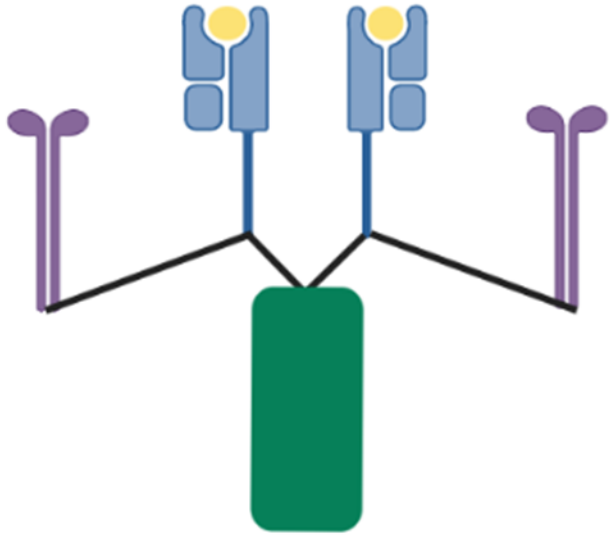
Immuno-STAT Modularity: 4 Interchangeable Modules

Peptide

Peptide epitopes to target different diseases

MHC

Different HLA alleles to address global patient populations



Co-stim/Co-reg

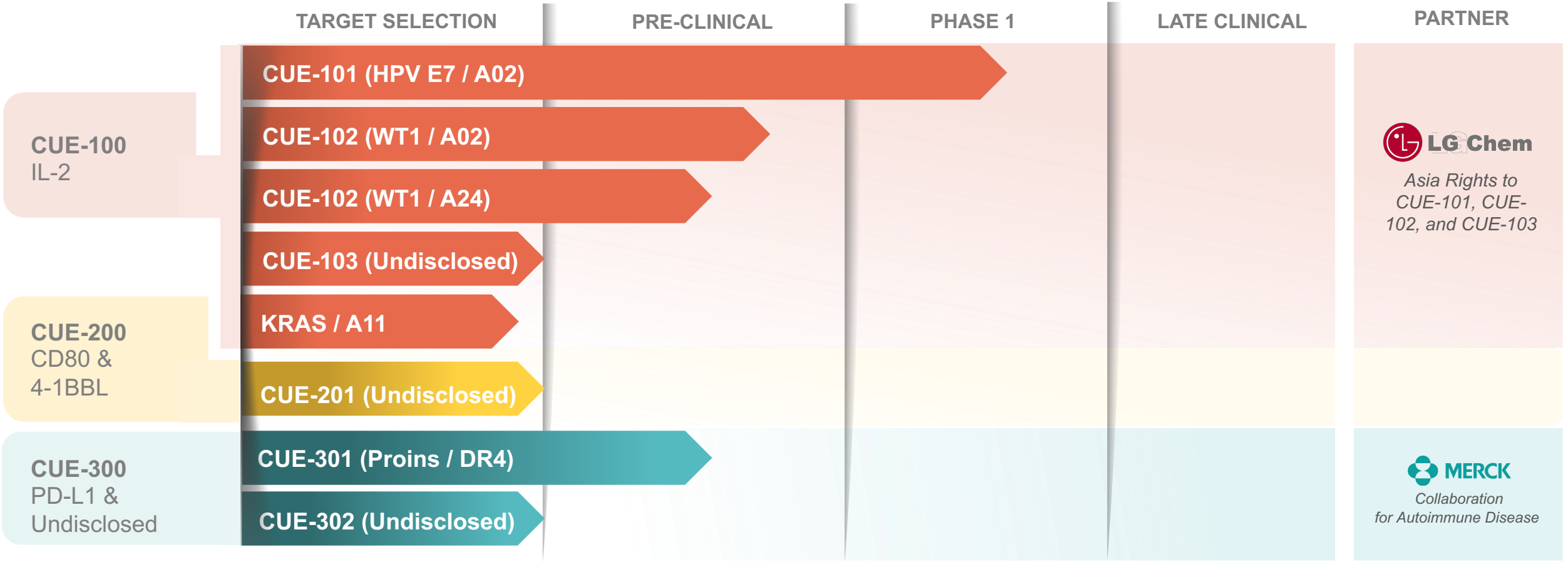
Distinct biological signals, including cytokines; cell-surface receptors; and/or other targeting modalities (e.g., scFv, etc.)

Fc Backbone

Fc engineering to dial in or out biological and effector functions

Combinatorial diversity presents potential to generate therapeutic molecules for a broad set of diseases and patient populations

Pipeline



CUE-100: Human papilloma virus (HPV)-positive cancers expressing HPV E7 protein (e.g., head and neck cancer)
CUE-102: Wilms Tumor 1 (WT1) positive cancers (e.g., leukemia and multiple solid cancers)
CUE-301: Type 1 diabetes with autoreactive T cells targeting proinsulin producing beta cells in the pancreas
KRAS is an oncogene and when mutated it is overexpressed and associated with many cancer types

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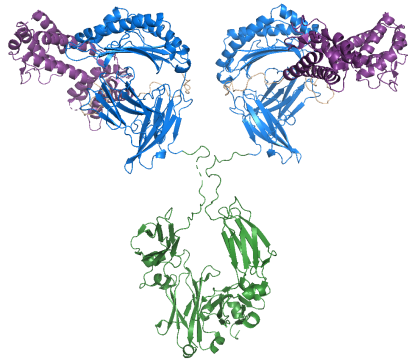
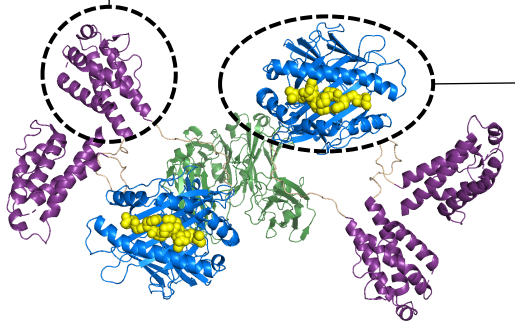
CUE-100 Series: Exploiting IL-2 via Rational Protein Design

CUE-100 Series

Side View



Top View



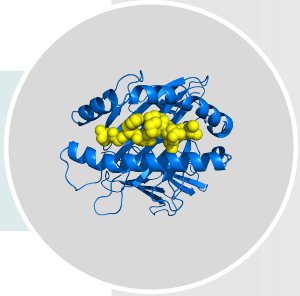
Modified IL-2 (IL-2 variant)

Tumor-Peptide Loaded HLA

Immune Signaling Components

"Signal 2" engagement with affinity modified IL-2:

- **Minimize Treg activation**
- **Selective activation of tumor-specific T cells, while avoiding activation of irrelevant T cells**
- **Differentiated MoA over "not-alpha" IL-2 variants**



"Signal 1" engagement of T cells via TCR:

- **Selective delivery of modified IL-2 to tumor-specific T cells**
- **Enables priming and expansion from naïve and pre-existing T cell repertoire**

Therapeutic framework is not dependent on barriers of antigen processing & presentation, and is designed to avoid systemic immune activation

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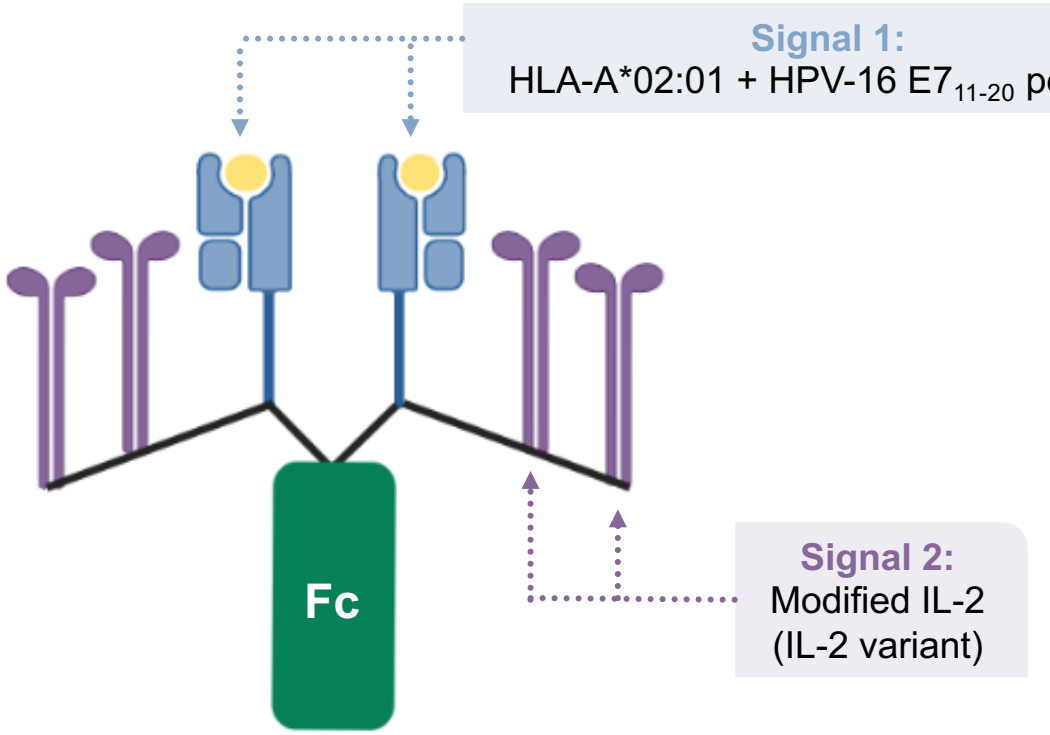
CUE-101: Lead Clinical Candidate for HPV-Driven Malignancies

CUE-101 Immuno-STAT Design



Clinical Rationale

- CUE-101 is designed to selectively prime and expand HPV-specific T cells in vivo
- HPV is recognized as a growing driver of head and neck cancer and is now responsible for over 70% of oropharyngeal cancers in the US and EU
- Despite treatment with current standards of care, more than 50% of patients with advanced disease will experience recurrence with significant quality of life impacts
- The CUE-101 clinical development strategy builds upon robust translational preclinical data and patient stratification

CUE-101: Phase I Clinical Development Network

- **Emory Winship Cancer Institute**: Nabil Saba
- **Karmanos Cancer Institute**: Elizabeth Heath and Ammar Sukari
- **MD Anderson Cancer Center**: Bonnie Glisson
- **MGH/Harvard and Dana Farber Cancer Institute**: Sara Pai and Lori Wirth
- **Moffitt Cancer Center**: Christine Chung
- **Memorial Sloan Kettering Cancer Center**: Lara Dunn
- **Stanford Cancer Center:** A. Dimitrios Colevas
- **University of Arizona Center:** Julie Bauman
- **University of Michigan Rogel Cancer Center:** Frank Worden
- **University of Washington Fred Hutch Cancer Center**: Cristina Rodriguez
- **Vanderbilt-Ingram Cancer Center**: Jill Gilbert and Mike Gibson
- **Washington University Siteman Cancer Center**: Doug Adkins
- **Yale Cancer Center**: Barbara Burtness

Cue has engaged a network of nationally recognized clinical investigators and 13 Phase I sites are now open

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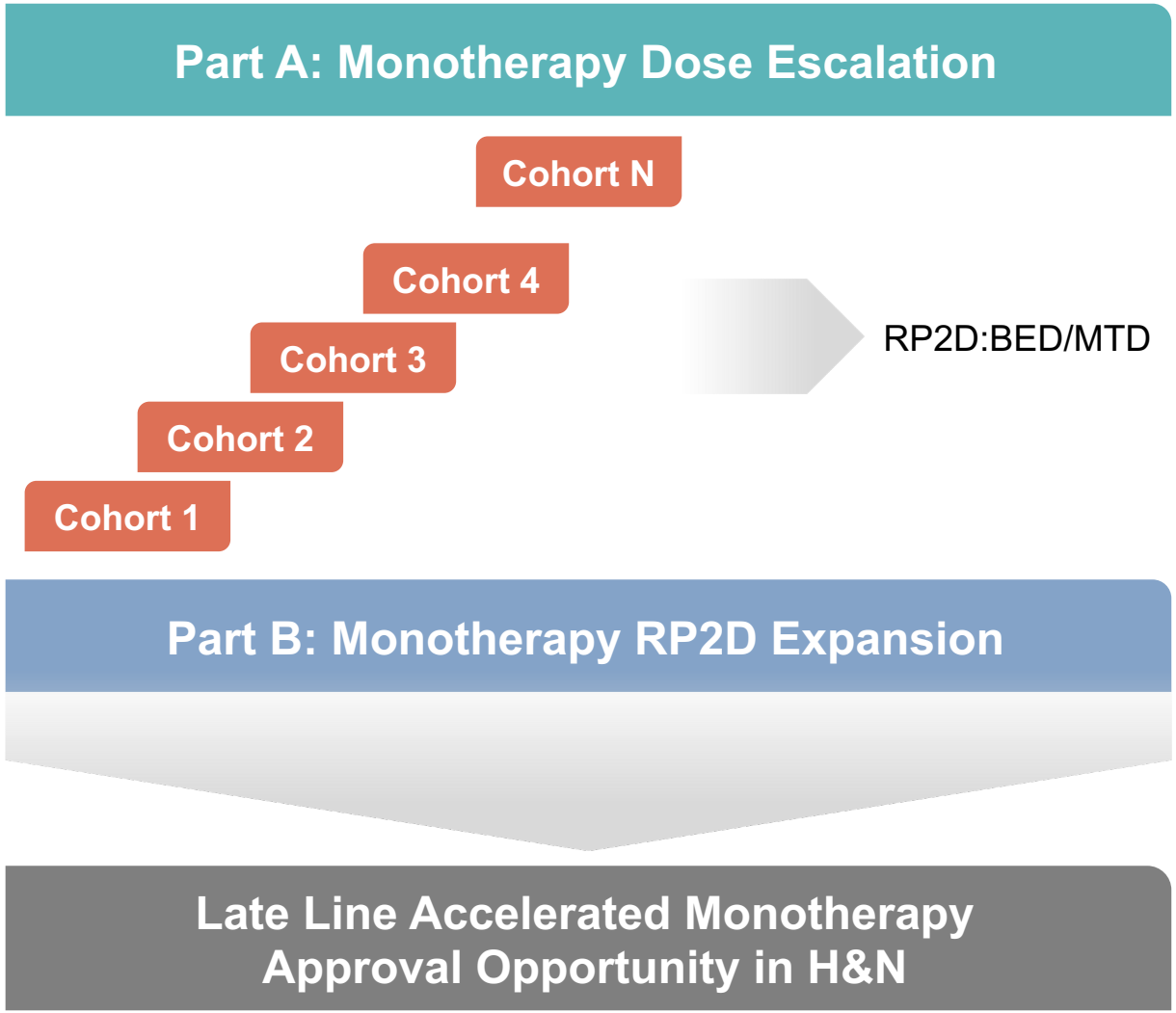
CUE-101: Ongoing First-In-Human Study



- **Eligibility**
  - Part A & B: HPV+ H&N Cancer, R/M, ≥ 2nd Line
- **Design** (CUE-101 Q3W)
  - Part A: Dose Escalation (3+3 Pts)
  - Part A: PD & Activity Expansion (Up to 9 Pts)
  - Part B: Dose Expansion (10-20 Pts at RP2D)
- **Objectives**
  - Primary: Safety and Tolerability
  - Secondary: PK/PD, Anti-Tumor Activity
- **Biomarkers** (Pre/Post CUE-101 Dose)
  - HPV E7-specific CD8+ T cell counts
  - HPV E7-specific CD8+ T cell functionality
  - Immunophenotyping, cytokine release, and TCR sequencing
- **NCT03978689**

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CUE-101: Part A Dose Cohorts

Cohort	CUE-101 Dose	CUE-101 Dose Relative to Approved Proleukin Dose (0.037 mg/kg)	CUE-101 IL-2* Content (nmol/kg)	CUE-101 IL-2 Content Relative to Approved Proleukin Dose (2.4 nmol/kg)
Cohort 1 ✓	0.06 mg/kg (starting dose)	~ 1.6x	1.1	~ 0.46x
Cohort 2 ✓	0.18 mg/kg	~ 4.9x	3.4	~ 1.4x
Cohort 3 ✓	0.54 mg/kg	~ 14.6x	10.3	~ 4.3x
Cohort 4 ✓	1 mg/kg	~ 27.0x	19.1	~ 8.0x
Cohort 5	2 mg/kg	~ 54.0x	38.2	~ 16.0x
Cohort 6	4 mg/kg	~ 108.0x	76.4	~ 32.0x
Cohort 7	8 mg/kg	~ 216.0x	152.9	~ 64.0x

Note: Check mark indicates patient(s) have been enrolled at dose level; enrollment for cohort 4 ongoing.

Modified IL-2 to abrogate binding to IL-2R alpha and reduce binding affinity to IL-2R beta

CUE-101: Safety & Activity Observations from Cohorts 1 – 4

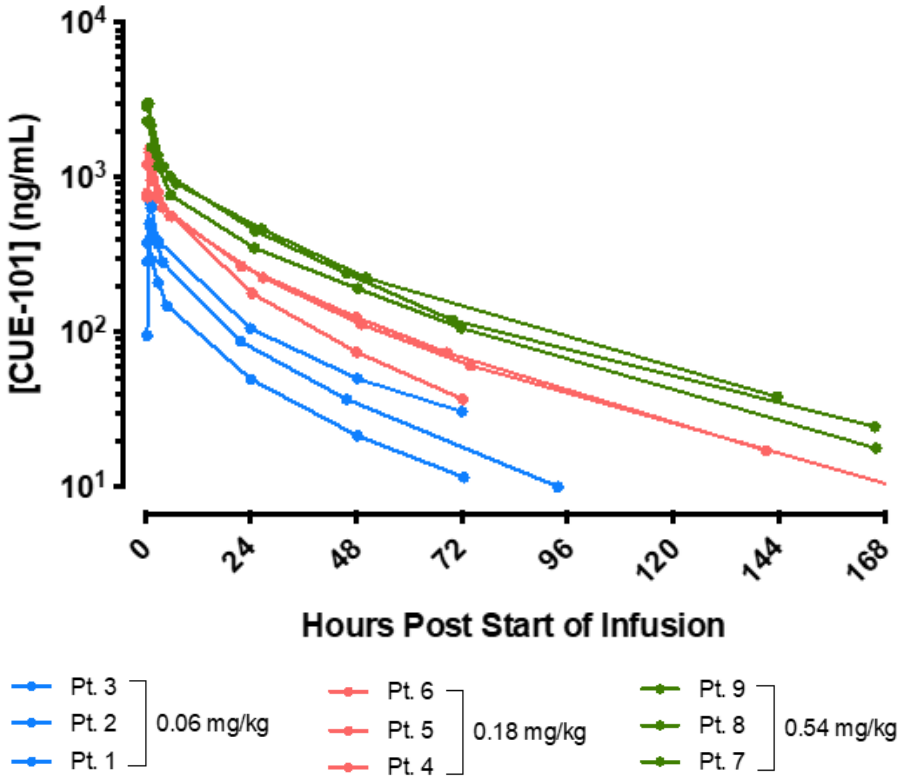
Safety

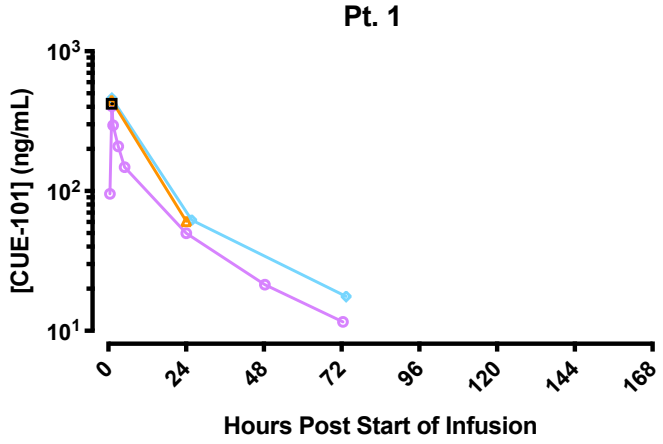
- Multiple patients receiving multiple injections indicates favorable safety and tolerability profile
- No drug-related DLTs in cohorts 1-3
- Cohort 4 expanded by 3 additional patients per protocol due to 1 patient experiencing Grade 3 adverse event (AE) that was designated as a possible drug-related DLT
  - Patient remains on study and received their next scheduled dose after AE resolution
- No patient discontinuations on trial due to adverse events

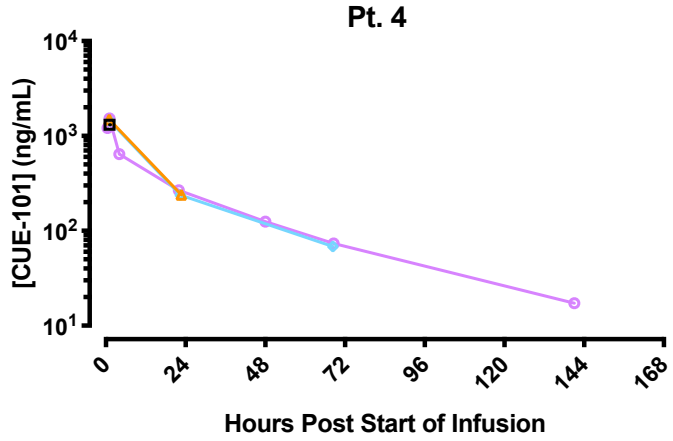
Activity

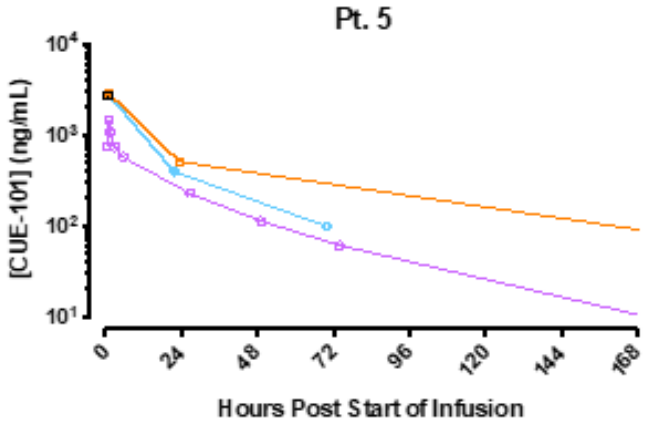
- PK data from the first three cohorts indicates:
  - *Exposure in-line with preclinical projections*
  - *Dose-proportional drug exposure*
  - *Comparable exposures observed upon repeated administration*
- PD data indicates early signals of selective T cell expansion
- Preliminary evidence that CUE-101 is clinically active

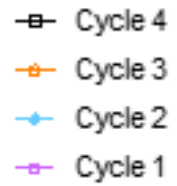
CUE-101: Dose-Proportional & Repeat Exposures from Cohorts 1 - 3





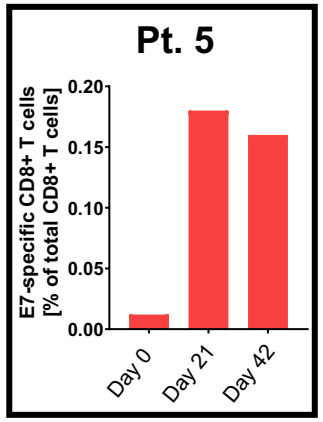


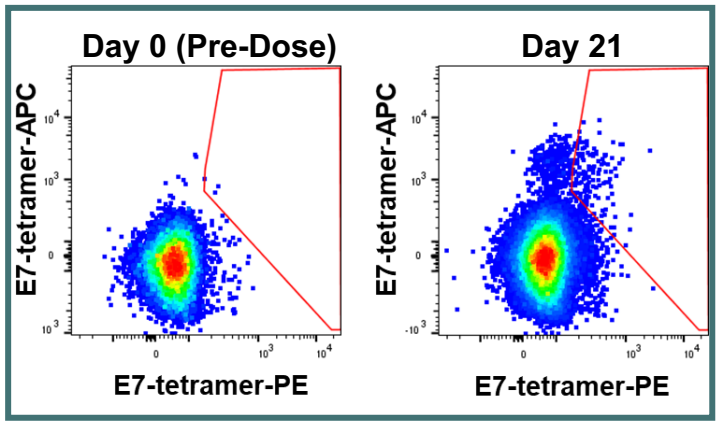


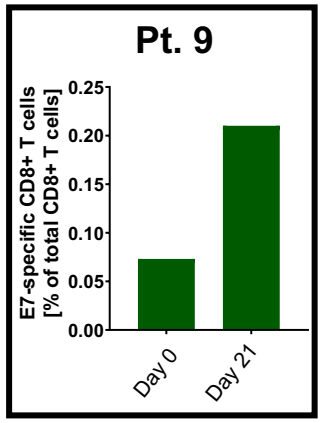


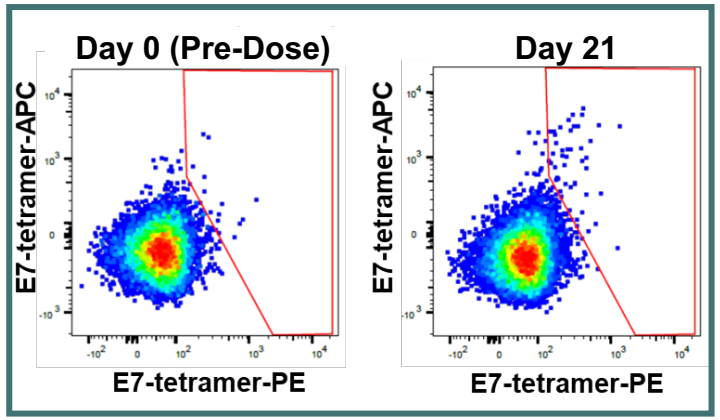
CUE-101 exhibits dose-proportional increases in exposure in line with projections from non-clinical studies and comparable exposures upon repeated administration

CUE-101: Expansion of E7-specific T Cells





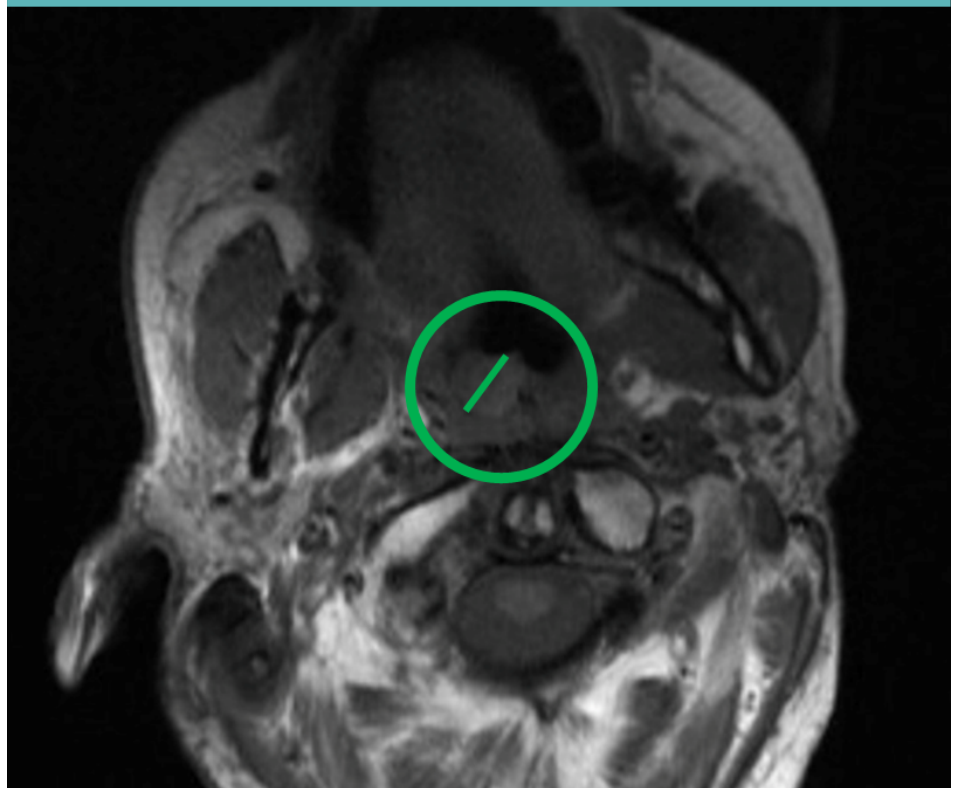




Preliminary evidence of expansion of E7-specific T cells observed in several patients

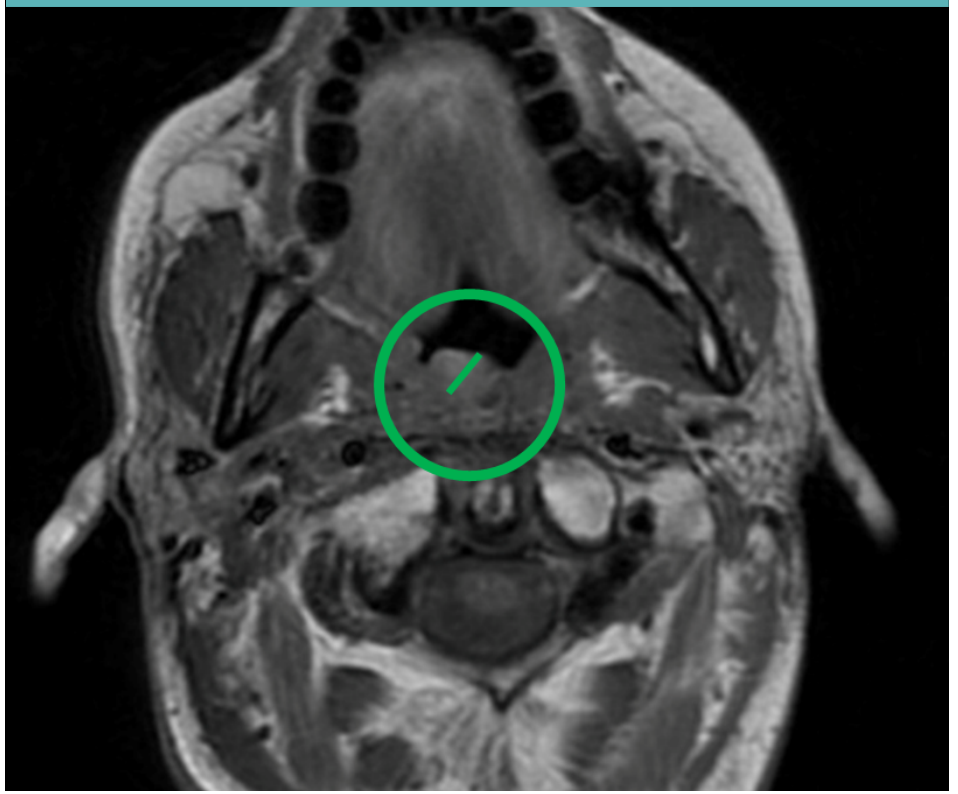
CUE-101: Cohort 2 Patient Case Study

Day 0: Baseline Tumor



Scan at day 42 (after 2 cycles of CUE-101) indicates reduction of >1cm target lesion

Day 42: 2 Cycles of CUE-101 Monotherapy



At day 84 the repeat scan showed sustained regression of the target lesion, and at that point the patient was confirmed as stable disease

Patient had received multiple lines of therapy, including checkpoint inhibition

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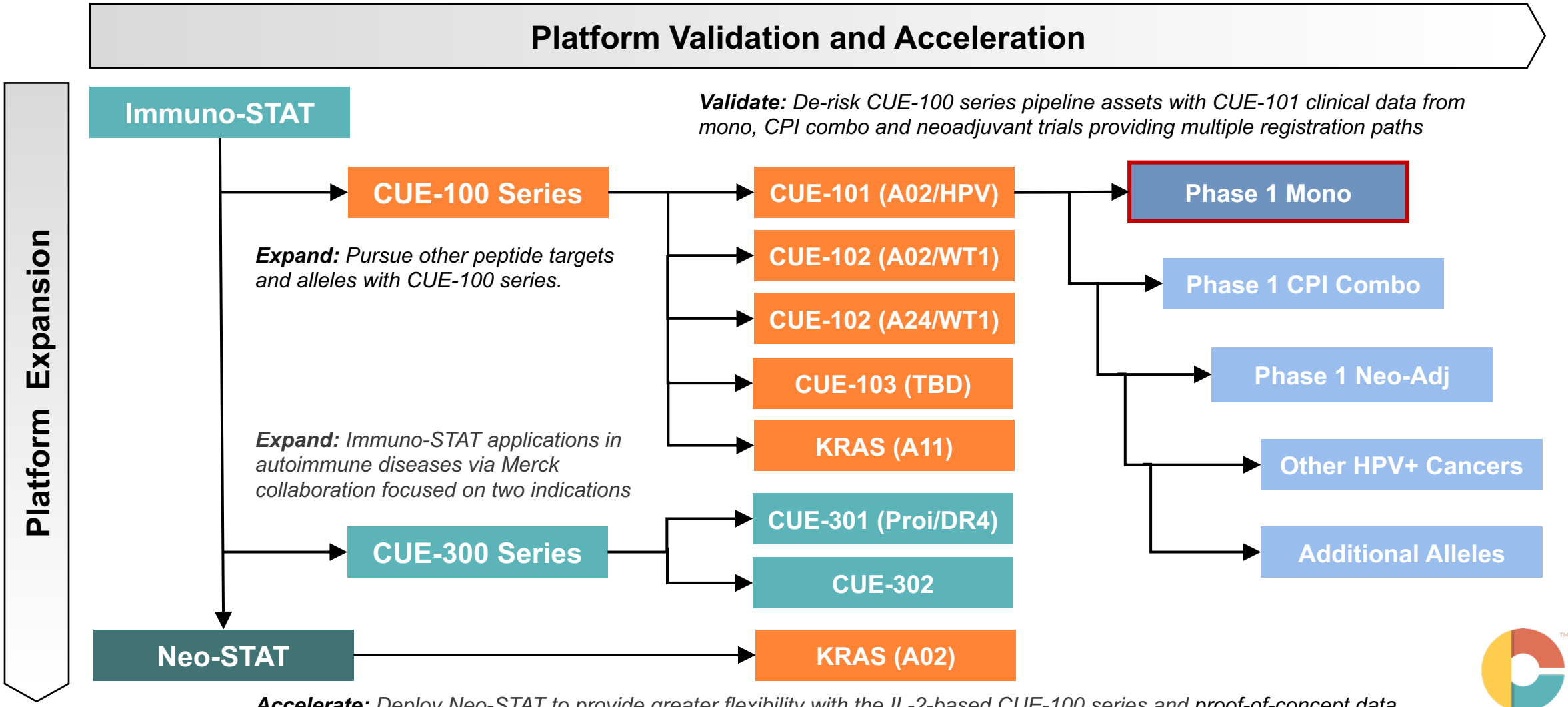
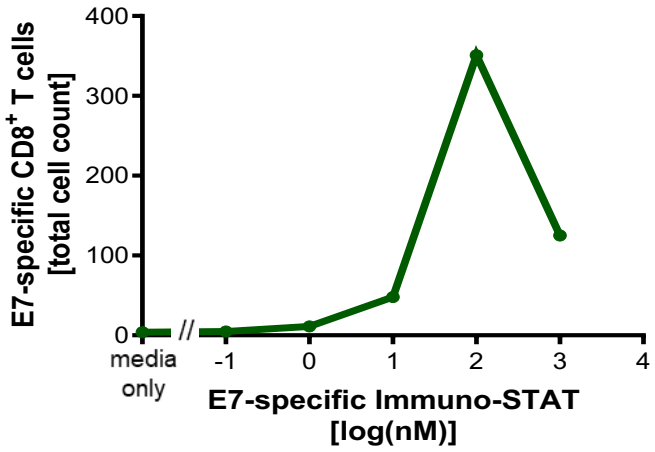
Corporate Development and Growth Strategy



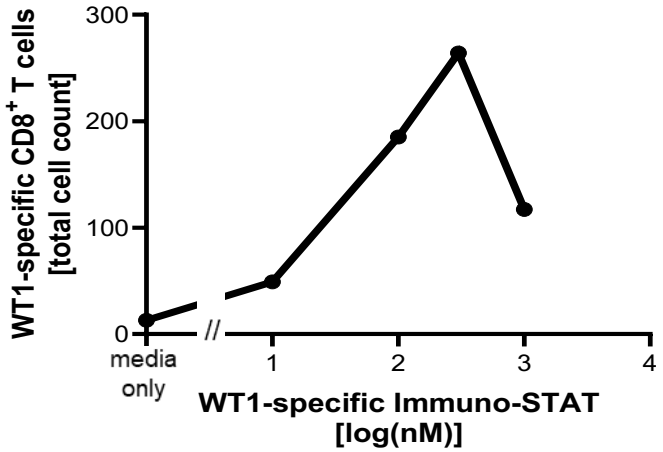
Accelerate: *Deploy Neo-STAT to provide greater flexibility with the IL-2-based CUE-100 series and* proof-of-concept data *demonstrating comparable safety and efficacy to Immuno-STAT with enhanced R&D and manufacturing efficiencies*

Immuno-STATs Demonstrate Selective T Cell Expansion

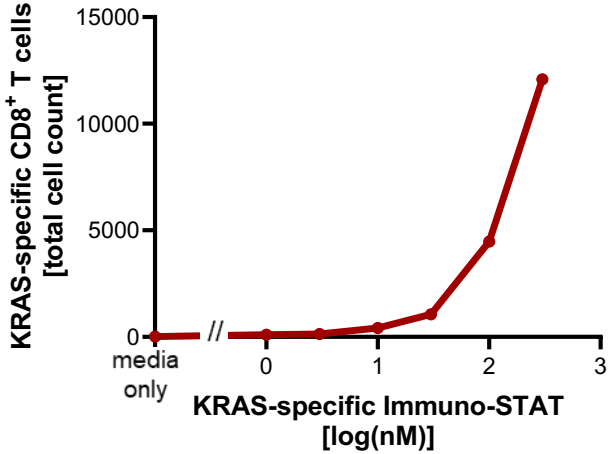
HPV (CUE-101)



WT1 (CUE-102)

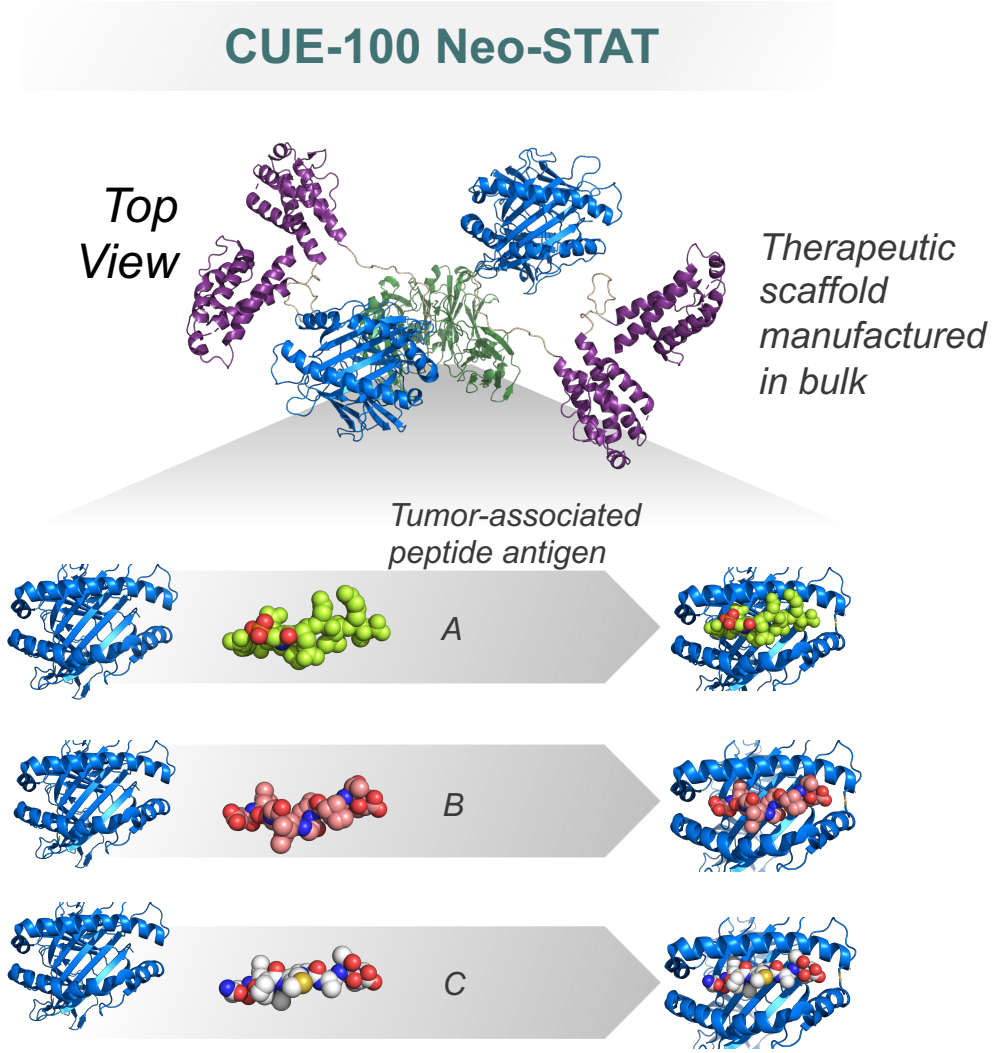


KRAS IST



Emerging data from CUE-102 (WT1) recently presented at NYAS Frontiers in Cancer Immunotherapy and AACR Annual Meeting II

Neo-STAT: Next-gen Evolution of the Immuno-STAT Framework

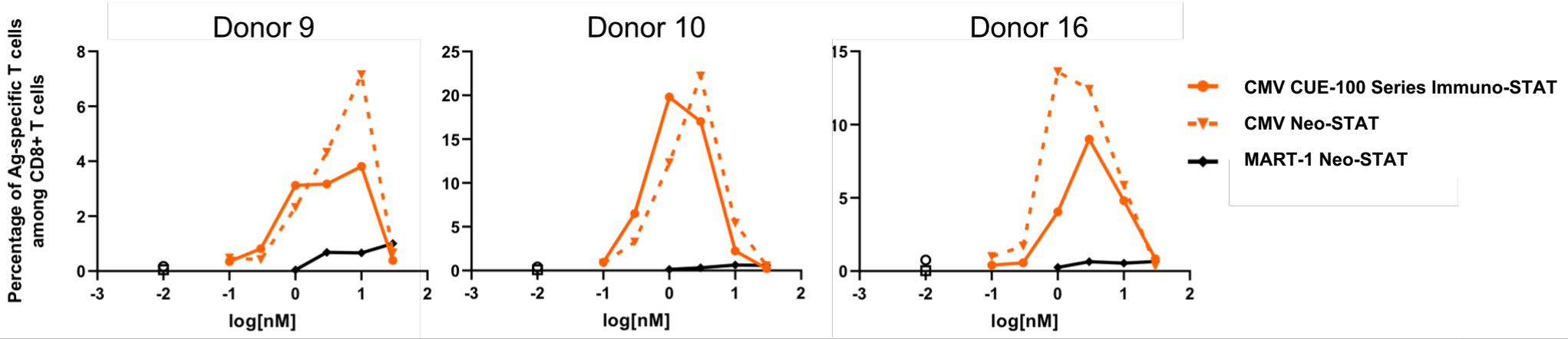


Therapeutic scaffold receptive for chemical conjugation of peptides that potentially:

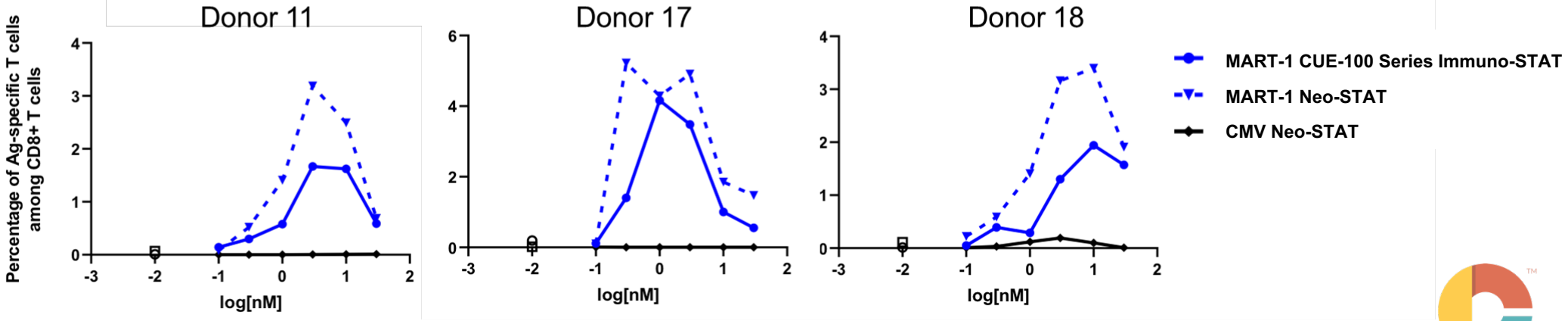
- **Increases R&D efficiency** and reduces cost of the generation of clinical grade material on the CUE-100 framework
- **Enables targeting of multiple tumor antigens** including post-translationally modified peptides and neo-antigens for personalized therapy

Primary Human T Cell Expansion: Neo-STAT = Immuno-STAT

CMV Responsive Donors



MART-1 Responsive Donors



Corporate Development Strategy

Validate

- Continue to generate clinical metrics for CUE-101 demonstrating safety, tolerability and clinical activity to de-risk CUE-101, CUE-100 series, as well as Immuno-STAT framework
- Establish therapeutic synergy with checkpoint inhibition through clinical collaboration with Merck to assess CUE-101 in combination with Keytruda in the front-line setting for HPV+ H&N Cancer

Expand

- Pursue additional targets (i.e., WT1, KRAS) and alleles (i.e., A11, A24) with CUE-100 series and establish preclinical datasets demonstrating selective T cell expansion and activation
- Expand Immuno-STAT applications in autoimmune diseases via Merck collaboration focused on two indications

Accelerate

- Provide proof of concept data supporting the biological activity of molecules generated via the Neo-STAT platform, and comparability to Immuno-STAT format
- Deploy Neo-STAT to enhance productivities, efficiencies, and provide greater flexibility with the IL-2-based CUE-100 series

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Key 2020 Milestones

1. Additional PK/PD results from the Phase 1 CUE-101 clinical trial in **2H20**
2. Clinical responses from the Phase 1 CUE-101 clinical trial via RECIST criteria in **2H20**
3. Initiate CUE-101 combination trial with Keytruda in 1L SCCHN in **2H20**
4. Initiate and extend IND-enabling activities for CUE-102 in **2H20**
5. Select target for CUE-103 in **3Q20**
6. Demonstrate Neo-STAT manufacturability and efficiencies in **2H20**
7. Identify potential clinical candidates in collaboration with Merck in **2H20**

Key objectives met in 2019 and early 2020 have set the stage for data flow from multiple programs in the remainder of 2020

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Thank you

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July 20, 2020