CUE™ BIOPHARMA

IMMUNE RESPONSES, ON CUE™

Cue Biopharma is an immunotherapy company developing a novel, proprietary class of biologics engineered to selectively modulate the human immune system.

Our Immuno-STAT (Selective Targeting and Alteration of T cells) platform is designed to directly engage with and modulate the activity of antigen specific T cells in a patient's body through a singular molecular framework. In addition to the selective control of T cell activity, we believe Immuno-STATs offer several key points of potential differentiation over competing approaches, including broad disease coverage, manufacturability, and convenient administration.

We plan to file our first Investigational New Drug application (IND) for CUE-101 in HPV-associated cancers during the first quarter of 2019 and are advancing a pipeline of additional preclinical candidates with the potential to treat cancers, autoimmune disorders and chronic infectious diseases.

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Cue Biopharma's Immunotherapy Pipeline

Immuno-Oncology

CUE-100 Series - MHC Class I / IL-2

	Discovery	Optimization	IND-Enabling	Phase 1	Development Partner
CUE-101 (HPV-E7 / IL-2)					LG Chem Asia Rights
CUE-102 (WT1 / IL-2)					LG Chem Asia Rights
CUE-103 (Undisclosed / IL-2)					LG Chem Asia Rights

Chronic Infectious Disease

CUE-200 Series - MHC Class I / CD80 and 4-1BBL

	Discovery	Optimization	IND-Enabling	Phase 1	Development Partner
CUE-201					

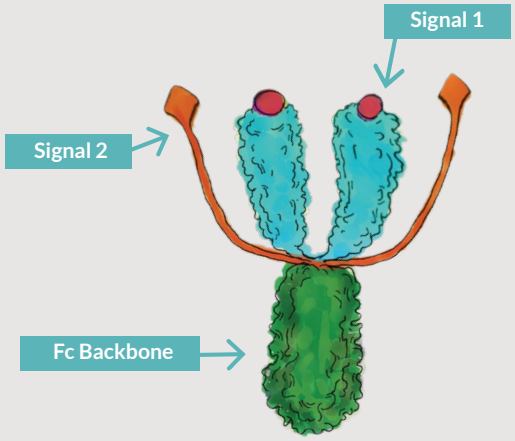
Autoimmune Disease

CUE-300 Series - MHC Class I & II / Undisclosed

	Discovery	Optimization	IND-Enabling	Phase 1	Development Partner
CUE-301					MERCK

The Immuno-STAT: A Selective Immune Response, Induced on Cue

Cue Biopharma has engineered a proprietary class of biologics to selectively modulate the activity of antigen-specific T cells in a patient's body. Our biologics are engineered to direct T cell activity via two distinct signals presented naturally by the body when mounting an immune response:



Core Components

Signal 1: A stabilized peptide-MHC complex (pMHC) to engage disease relevant T cells.

Signal 2: A co-stimulatory or inhibitory signal to control the activity of target T cells.

Fc Backbone: A well-characterized construct that provides stability and ease of manufacture.

IMMUNO-ONCOLOGY:

CUE-100 Framework

Drug candidates developed within our CUE-100 framework selectively stimulate the interleukin 2 (IL-2) receptor, a potent activator of the pathway critical to the growth, expansion and survival of T cells. We have engineered the framework to activate specific T cell populations through peptide-MHC complex (pMHC) targeting of T cell receptors (TCRs) and selective deployment of the IL-2 signal. The IL-2 has been attenuated to enable our Immuno-STATs to preferentially activate tumor specific T-cells without systemically activating other T cell populations, thereby potentially mitigating the dose-limiting toxicities associated with current IL-2-based therapies.

CUE-101

Our lead drug from the CUE-100 framework, CUE-101, contains IL-2 and a pMHC composed of HLA-A*02:01 complexed with a dominant peptide derived from the human papilloma virus E7 protein (HPV-E7). It is a fusion protein biologic designed to target and activate antigen-specific T cells to fight HPV-driven cancers.

In preclinical studies, CUE-101 has demonstrated selective binding and preferential activation and expansion of antigen-specific T cells, dose-dependent effector cytokine production and inhibition of tumor growth both as a monotherapy and in combination with a PD-1 inhibitor. These findings were previously presented at the Society for Immunotherapy of Cancer's (SITC) 33rd Annual Meeting. We expect to move CUE-101 into the clinic in 2019.

CUE-102

CUE-102 leverages the CUE-100 framework and a pMHC derived from the Wilms' Tumor protein (WT1), a non-viral antigen known to be over-expressed in a number of cancers, including solid tumors and hematologic malignancies. We plan to initiate preclinical studies in collaboration with our partner LG Chem Life Sciences in 2019.

CHRONIC INFECTIOUS DISEASE:

CUE-200 Framework

The CUE-200 framework utilizes co-stimulatory cell surface receptors, including CD80 and/or 4-1BBL to reactivate exhausted T cells and are designed to promote enhanced antigen-specific T cell activation and function for the treatment of chronic infectious diseases.

AUTOIMMUNE DISEASE:

CUE-300 Framework

The CUE-300 framework has the potential to target a broad range of addressable autoimmune diseases by selectively modulating disease-associated T cells so that healthy cells are protected from immune attack, without compromising the immune system. Immuno-STATs inhibit autoimmune disease-associated T cells via two general strategies:

- Inhibition of autoreactive T cells by selectively delivering inhibitory signals; or
- Selective expansion of regulatory T cells (Tregs) to control aberrant activation of autoreactive T cells.