Cue Biopharma Announces PLOS One Publication Demonstrating the Generation and Evaluation of Novel Molecules with Directed Mutations within the B7 Superfamily

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- Novel insights into receptor binding events and interfaces have led to generation of selective molecules with unique biochemical and functional properties through an effort led by Dr. Steven Almo at Albert Einstein College of Medicine

- Enhances Cue Biopharma's ability to engineer molecules for therapeutic immune modulation through Immuno-STAT and Neo-STAT platforms

CAMBRIDGE, Mass., July 08, 2020 (GLOBE NEWSWIRE) -- Cue Biopharma, Inc. (NASDAQ: CUE), a clinical-stage biopharmaceutical company engineering a novel class of injectable biologics to selectively engage and modulate targeted T cells within the body, today announced the peer-reviewed publication of data focused on generation and evaluation of libraries of checkpoint molecules with directed mutations providing novel biological properties in a paper titled "*Mechanistic dissection of the PD-L1:B7-1 co-inhibitory immune complex*."

In this work, researchers focused primarily on the recently described interaction between B7-1 and PD-L1, two molecules within the B7 superfamily, which are of critical importance for controlling anti-tumor immunity, autoimmunity and infectious diseases. By combining cell microarray and high-throughput FACS methods to screen binding events and map binding interfaces, selective mPD-L1 and mB7-1 mutants with distinct biochemical and functional properties were generated that altered the binding interactions between PD-1 and PD-L1, and CTLA-4 and B7-1 as well as the recently described PD-L1 and B7-1 binding interaction.

"Our efforts expand upon the fundamental understanding of critical binding interactions and related downstream signaling cascades by more completely defining the molecular interactions between these key cell surface molecules," said Steven C. Almo, Ph.D., professor and chair of biochemistry, professor of physiology & biophysics and the Wollowick Family Foundation chair in multiple sclerosis and immunology at Albert Einstein College of Medicine, and co-founder of Cue Biopharma. "Through these studies we are able to decipher specific molecular and atomic insights to engineer and generate molecules with unique biochemical and functional properties with the aim of developing more efficacious treatments with fewer unwanted side effects."

This approach augments and supplements Cue Biopharma's Immuno-STAT™ and Neo-STAT™ platforms, leveraging rational protein engineering to generate therapeutic frameworks possessing desirable drug properties while attenuating and/or abrogating unwanted, deleterious effects. CUE-101, Cue Biopharma's lead asset from the IL-2 based CUE-100 Series, was rationally engineered to enhance the selective activation of the beneficial CD8+ anti-tumor T cells, while abrogating the effects on other immune cell populations that are deleterious to cancer therapy, such as regulatory T cells. A CUE-101 Phase 1 monotherapy trial is ongoing, with enrollment of patients in dose escalation at 13 leading centers in the United States for the treatment of post first-line metastatic and recurrent HPV+ advanced head and neck cancer. Early data metrics from this trial are encouraging with demonstration of safety and tolerability, dose proportional exposure pharmacokinetics (PK) and early, albeit anecdotal, evidence of biologic activity through pharmacodynamics (PD) biomarkers and clinical benefit.

"We are highly encouraged by these findings and further research being conducted in Dr. Almo's laboratory, which provides us with additional, novel insights into immune receptors," said Anish Suri, Ph.D., president and chief scientific officer of Cue Biopharma. "Learnings from this important work will augment and further advance our internal efforts to build out the Immuno-STAT and Neo-STAT platforms and enhance our ability to dial-in/dial-out specific molecular interactions for the therapeutic modulation of the immune system in cancer, autoimmune diseases and chronic infectious diseases."

Albert Einstein College of Medicine and its faculty members acknowledge the following relationships with Cue Biopharma, Inc.: Dr. Almo holds equity in Cue Biopharma, Inc., receives royalties from existing license agreements between Einstein and Cue, and is a member of its Science Advisory Board; Dr. Garrett-Thomson receives royalties; and Albert Einstein College of Medicine holds equity in Cue and receives royalties.

About Cue Biopharma
Cue Biopharma, a clinical-stage biopharmaceutical company, is engineering a novel class of injectable biologics to selectively engage and modulate targeted T cells within the body to transform the treatment of cancer and autoimmune diseases. The company's proprietary platform, Immuno-STAT ™ *(Selective Targeting and Alteration of T cells)* is designed to harness the body's intrinsic immune system without the need for ex vivo manipulation.

Headquartered in Cambridge, Massachusetts, we are led by an experienced management team and independent Board of Directors with deep expertise in the design and clinical development of protein biologics, immunology and immuno-oncology.

For more information, visit www.cuebiopharma.com and follow us on Twitter https://twitter.com/CueBiopharma.

Forward-Looking Statements
This press release contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, that are intended to be covered by the "safe harbor" created by those sections. Forward-looking statements, which are based on certain assumptions and describe our future plans, strategies and expectations, can generally be identified by the use of forward-looking terms such as "believe," "expect," "may," "will," "should," "would," "could," "seek," "intend," "plan," "goal," "project," "estimate," "anticipate," "strategy," "future," "likely" or other comparable terms. All statements other than statements of historical facts included in this press release regarding our strategies, prospects, financial condition, operations, costs, plans and objectives are forward-looking statements. Examples of forward-looking statements include, among others, statements we make regarding anticipated results of our drug development efforts,

including study results, and our expectations regarding regulatory developments and expected future operating results. 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, our limited operating history, limited cash and a history of losses; our ability to achieve profitability; potential setbacks in our research and development efforts including negative or inconclusive results from our preclinical studies, our ability to secure required U.S. Food and Drug Administration (“FDA”) or other governmental approvals for our product candidates and the breadth of any approved indication; adverse effects caused by public health pandemics, including COVID-19, including possible effects on our operations and clinical trials; negative or inconclusive results from our clinical studies or serious and unexpected drug-related side effects or other safety issues experienced by participants in our clinical trials; delays and changes in regulatory requirements, policy and guidelines including potential delays in submitting required regulatory applications to the FDA; our reliance on licensors, collaborators, contract research organizations, suppliers and other business partners; our ability to obtain adequate financing to fund our business operations in the future; ; and the other risks and uncertainties described in the Risk Factors and in Management's Discussion and Analysis of Financial Condition and Results of Operations sections of our most recently filed Annual Report on Form 10-K and any subsequently filed Quarterly Report(s) on Form 10-Q. Any forward-looking statement made by us in this press release is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise.

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