Cue Biopharma Announces Positive Topline Results from CUE-221 Phase 2 Study in Chronic Spontaneous Urticaria

September 20, 2026

Results support potential for differentiated clinical impact for patients suffering from chronic hives and advancement to Phase 2b/3 registration enabling study

- Primary endpoint and the key secondary endpoint were met with high statistical significance and CUE-221 demonstrated an overall favorable safety profile
- Clinically different efficacy profile observed relative to XOLAIR® (omalizumab) highlights potential for a fundamental mechanism-based biological difference
- Cue Biopharma to host conference call on Monday, September 21, at 8:00 a.m. EDT

BOSTON, Sept. 20, 2026 (GLOBE NEWSWIRE) -- Cue Biopharma (Nasdaq: CUE), a clinical-stage biopharmaceutical company targeting transformative therapies for immune-mediated diseases, today announced positive topline results from the Phase 2 clinical trial of CUE-221 (UB-221) conducted in China by Genesis Life Sciences, a related company of Ascendant Health Limited (Ascendant). The trial enrolled 145 participants with moderate to severe chronic spontaneous urticaria (CSU), a disease resulting in chronic hives, that remained inadequately controlled despite treatment with H1 antihistamines.

“We are excited to share these positive results which we believe establish CUE-221 as a potential best therapeutic option for patients suffering with chronic spontaneous urticaria,” said Shao-Lee Lin, M.D., Ph.D., President and Chief Executive Officer of Cue Biopharma. “These findings reinforce our enthusiasm for the precision engineered, unique dual mechanism of action of CUE-221, reflecting science that is truly differentiated. Based on the strength of these data, we are working toward the rapid initiation of a Phase 2b/3 study in CSU and continuing to advance a planned Phase 2 study in food allergy. We thank the patients, investigators, and study staff, all of whom made these results possible. We look forward to presenting the complete data set including PK and IgE analyses from this 36-week study at an upcoming scientific meeting.”

Phase 2 CSU Study Topline Results
The Phase 2 multicenter, randomized, double-blind, placebo and active comparator-controlled study was conducted in China and included a 16-week treatment period with a 20-week follow-up period post-treatment. Patients were randomized in a 2:2:2:1:1 ratio across five treatment groups to either subcutaneously deliver CUE-221 at 4 mg/kg, 2 mg/kg, or 1 mg/kg Q4W, or placebo Q4W, or omalizumab 300 mg Q4W. The primary endpoint was the proportion of patients who achieved HSS7=0 at week 12. A key secondary endpoint assessed complete response, defined as the proportion of patients who achieved UAS7=0 at week 12. The study was designed to test superiority over placebo. Omalizumab was included to enable comparative efficacy without planned statistical testing.

The primary endpoint of percentage of patients with HSS7=0 at week 12 was dose-responsive and met at all dose levels. The key secondary endpoint of percentage of patients with UAS7=0 at week 12 was dose responsive and met statistical significance at the 4 mg/kg highest dose level.

Primary Endpoint of HSS7=0 at Week 12					
	CUE-221 (Q4W)			**Placebo Q4W**	**Omalizumab Q4W**
	4 mg/kg (N=35)	**2 mg/kg (N=36)**	**1 mg/kg (N=37)**	**(N=18)**	**300 mg (N=17)**
Complete Resolution of Hives (HSS7=0)	54%	53%	43%	11%	41%
95% Confidence Interval	(37%, 71%)	(36%, 70%)	(27%, 61%)	(1%, 35%)	(18%, 67%)
P-values (vs placebo)	**p < 0.005**	**p < 0.005**	**p < 0.05**	NA	Not Tested

P-values based on Fisher’s exact test; Clopper-Pearson 95% confidence interval

Key Secondary Endpoint of UAS7=0 at Week 12					
	CUE-221 (Q4W)			**Placebo Q4W**	**Omalizumab Q4W**

	4 mg/kg (N=35)	2 mg/kg (N=36)	1 mg/kg (N=37)	N=18	300 mg (N=17)
Complete Response (UAS7=0)	46% *	39%	38%	11%	29%
95% Confidence Interval	(29%, 63%)	(23%, 57%)	(23%, 55%)	(1%, 35%)	(10%, 56%)

* p<0.05 P-values based on Fisher's exact test; Clopper-Pearson 95% confidence interval

The percentage of participants who achieved HSS7=0 further increased beyond the Week 12 primary endpoint, peaking at Week 22 across all CUE-221 dose groups. After a last dose was administered for all groups at Week 16, clinically meaningful benefit was maintained for up to 12 weeks off treatment (through week 28) at the 4 mg/kg dose level. A higher rate of complete resolution of hives was observed for the 4 mg/kg dose group relative to the lower dose groups and placebo, and post hoc analysis at Week 28 demonstrated a statistically significant difference versus omalizumab (delta = 36%), supporting the premise of fundamental difference between CUE-221 and omalizumab with respect to impacts on disease biology.

Complete Resolutions of Hives at Primary Endpoint, Peak Effect, and 12 Weeks Off Drug						
	CUE-221 (Q4W)			Placebo Q4W	Omalizumab Q4W	CUE 4mg/kg vs.Omalizumab
Time	4 mg/kg	2mg/kg	1 mg/kg	Placebo	300 mg	Δ in Percent
Week 12 Primary	54%	53%	43%	11%	41%	13%
Week 22 Peak Effect	69%	61%	57%	11%	41%	28%
Week 28 12 weeks off drug	60%	31%	24%	11%	24%	**36% ***

* p<0.05 P-values based on Fisher's exact test

Demographics and baseline disease characteristics were generally well balanced across treatment groups. CUE-221 demonstrated a favorable safety profile. There were no treatment-related serious adverse events and no cases of hypersensitivity reactions including anaphylaxis. Injection site reactions (ISR) were infrequent, only one ISR was > grade 1, and none led to study discontinuation.

"The results of the Phase 2 CUE-221 study in patients with CSU are particularly notable," said Dale Umetsu, M.D., Ph.D., Clinical Professor of Medicine and former Chief of the Allergy and Immunology Division, Stanford University, Clinical Professor of Pediatrics, University of California, San Francisco and prior Global Lead for XOLAIR development. "First, the results after 12 weeks of treatment, after three doses, appear to indicate that CUE-221 was better than XOLAIR for CSU at all dose levels tested. Moreover, there was persistent improvement with the 4 mg/kg dose at week 28, which was 12 weeks off treatment, significantly better than that off of standard XOLAIR dosing. Finally, the safety data analyzed so far, show no major safety issues, which is not unexpected from an anti-IgE mAb."

Dr. Umetsu added, "These results suggest that CUE-221, like XOLAIR is designed to prevent IgE from binding to FceR1 but unlike XOLAIR, allows IgE to bind to CD23, may represent a critical advancement over XOLAIR. The results support that the effects of CUE-221 on IgE function could result in substantial efficacy in CSU that persists for several months, even after dosing ends. Since XOLAIR has represented the clear standard for all other CSU therapies, the possibility that CUE-221 may represent a clear improvement above that of XOLAIR is most impressive. That improvement in efficacy may be directly relevant for food allergy, another area where XOLAIR currently prevails as the standard-of-care."

"I am very pleased to see these outstanding results from the UB-221 Phase 2 CSU trial," said Tse-Wen Chang, Ph.D., innovator of XOLAIR as well as UB-221 and an international expert in IgE biology. "The UB-221 data provide clear clinical evidence validating the molecule's design to not only directly neutralize IgE, but also to create a next-generation approach to eliminate the production of new IgE over time. This fundamental difference in biological mechanism that is now clinically evident cannot be reached by giving higher doses or more potent IgE neutralization. Having invented several novel IgE-targeting molecules that ultimately led to the creation of UB-221, I am encouraged by these emerging data and the potential for this approach to offer a meaningfully different path toward a functional treatment for IgE-mediated diseases."

Webcast and Conference Call
Cue Biopharma will host a conference call and webcast on **Monday, September 21 at 8:00 a.m. EDT** to present the results. The event will be webcast live and can be accessed via the attached link below. **https://edge.media-server.com/mmc/p/mjexxy37**

About Dale Umetsu, M.D., Ph.D.
Dale Umetsu, M.D., Ph.D., Former chief of the allergy immunology division and tenured professor of pediatrics at Stanford University, and Former Prince al Saud Professor of Pediatrics AT Harvard Medical School. Dr. Umetsu also led global development of XOLAIR and the approval of XOLAIR for CSU and food allergy while at Genentech. Currently, he serves as a clinical professor of pediatrics at the University of California, San Francisco.

About Tse-Wen Chang, Ph.D.
Tse-Wen Chang, Ph.D., is a Taiwanese immunologist and pioneer in anti-IgE therapy. His early research into the immunoglobulin E (IgE) pathway and antibody-based therapeutics contributed to the development of omalizumab (XOLAIR), which is approved for the treatment of severe allergic asthma and severe chronic spontaneous urticaria. Dr. Chang is a cofounder of Tanox, a biopharmaceutical company focused on anti-IgE therapies for allergic diseases. He previously served as Dean of the College of Life Sciences at National Tsing Hua University in Taiwan and as Distinguished Research Fellow at the Genomics Research Center, Academia Sinica.

About Chronic Spontaneous Urticaria
CSU is a chronic inflammatory skin disease driven in part by type 2 inflammation, which causes sudden and debilitating hives and recurring itch. CSU is typically treated with H1 antihistamines, medicines that target H1 receptors on cells to control symptoms of itch and urticaria. However, the disease remains uncontrolled despite antihistamine treatment in many patients, some of whom are left with limited alternative treatment options. These individuals continue to experience symptoms that can be debilitating and significantly impact their quality of life.

About CUE-221
CUE-221 (Ascendant-221, UB-221) is a humanized anti-IgE IgG1 monoclonal antibody designed with a precision engineered dual mechanism of action. CUE-221 binds to IgE at sites that are distinct from the binding sites for other anti-IgE monoclonal antibodies. In doing so, it maintains the capacity of total IgE to bind the CD23 receptor at the surface of B cells, resulting in reduced IgE synthesis. Therefore, CUE-221 is a functionally distinct novel anti-IgE antibody designed to not only neutralize free IgE with high potency, but also prevents the synthesis of new IgE which could ultimately result in functional cure if IgE is eradicated. The CUE-221 Phase 2 clinical trial in CSU produced positive topline results and clinical evidence providing initial validation of the clinical potential of a precision engineered anti-IgE dual mechanism of action. The study also demonstrated fundamental biological differences compared to current therapies. Based on these data, we are planning to advance CUE-221 in a Phase 2b/3 study in chronic spontaneous urticaria and in a Phase 2 study in food allergy.

CUE-221 (UB-221) was innovated by Dr. Chang Tse Wen, a pioneer in the field of anti-IgE therapy, while serving as a Fellow of Academia Sinica. UB-221 was originally developed by United Biopharma (Holdings) Co., Ltd. (“United Biopharma”) with rights allocated between two of United Biopharma’s related companies, Genesis Life Sciences (“Genesis”) (China, Hong Kong, Macau and Taiwan, where Genesis continues development of the antibody under the name UB-221) and Ascendant Health Limited (“Ascendant”) (rest of world). Under an exclusive license agreement with Ascendant, Cue Biopharma obtained exclusive development, manufacturing, and commercialization rights in Ascendant’s rest of world territories.

About Cue Biopharma
Cue Biopharma (Nasdaq: CUE) is a clinical stage biopharmaceutical company focused on advancing a portfolio of potentially transformative therapies designed to enable functional cures across immunological disorders. Its lead asset, CUE-221, is a novel anti-IgE antibody with a dual mechanism of action design, moving into Phase 2b/3 development for allergic diseases. In addition, Cue developed the Immuno-STAT® platform which selectively targets disease-specific T cells in vivo without broad immune modulation. Its lead autoimmune candidate, CUE-401, has an investigational new drug application pending in the U.S. for a Phase 1 clinical trial. CUE-401 is designed to regulate inflammation and drive Treg-mediated tolerance. Cue is led by an experienced management team with deep expertise in identifying, acquiring, and advancing promising drug candidates.

About Ascendant Health Limited
Ascendant is a privately held biotechnology company committed to delivering transformative solutions to patients globally.

About Genesis Life Sciences
Genesis Life Sciences focuses on the innovative development of monoclonal antibody drugs. It is a biopharmaceutical company with a product line in late-stage clinical trials, specializing in the development of innovative monoclonal antibody drugs applicable to chronic infectious diseases, allergic diseases, and autoimmune diseases. Closely aligned with key national research projects and market demand, the company has introduced highly promising monoclonal antibody products, leveraging internal research capabilities and support from expert teams across various fields to accelerate the product launch and sales process. We care about human health and well-being, focus on unmet patient needs, and drive monoclonal antibody development through innovative thinking, ultimately sharing our results with partners and the public, striving to provide the best treatment for patients.
*XOLAIR® is a registered trademark of Novartis AG.

Cautionary Note Regarding Forward-Looking Statements
This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include, but are not limited to, those regarding the potential of CUE-221, including its potential future benefit to patients, the company’s plans with respect to CUE-221, including the initiation of a Phase 2b/3 clinical trial in CSU and a Phase 2 clinical trial in food allergy and the timing thereof, the company’s expectations regarding the presentation of full clinical data from the Phase 2 CUE-221 trial, the company’s growth, and the company’s business strategies, plans, and prospects.

Forward-looking statements, which are based on certain assumptions and describe the company’s 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,” “promise,” “potential” or other comparable terms, although not all forward-looking statements contain these identifying words. All statements other than

statements of historical facts included in this press release regarding the company's strategies, prospects, financial condition, operations, costs, plans, and objectives are forward-looking statements. Important factors that could cause the company's actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the company's ability to maintain and establish collaboration, licensing and other arrangements; the company's limited operating history, limited cash and a history of losses; the company's ability to achieve profitability; potential setbacks in the company's research and development efforts for its current and future drug product candidates, including negative or inconclusive results from its preclinical studies or clinical trials or the company's ability to replicate in later clinical trials positive results found in preclinical studies and early-stage clinical trials of its product candidates; serious and unexpected drug-related side effects or other safety issues experienced by participants in clinical trials; potential challenges associated with clinical trials conducted in China and the company's access to, and acceptability of, the data therefrom; its ability to secure required U.S. Food and Drug Administration ("FDA") or other governmental approvals for its product candidates and the breadth of any approved indication; delays and changes in regulatory requirements, policy and guidelines including potential delays in submitting required regulatory applications to the FDA; the company's reliance on licensors, collaborators, contract research organizations, suppliers and other business partners; the company's ability to obtain adequate financing to fund its business operations in the future; the company's ability to maintain and enforce necessary patent and other intellectual property protection; competitive factors; general economic and market conditions and the other risks and uncertainties described in the Risk Factors and Management's Discussion and Analysis of Financial Condition and Results of Operations sections of the company's 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 the company in this press release is based only on information currently available to the company and speaks only as of the date on which it is made. The company undertakes 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.

Investor and Media Contact
Agnes Lee
Chief Investor Relations & Communications Officer
alee@cuebio.com

Marie Campinell
Senior Director, Corporate Communications

ir@cuebio.com
Cue Biopharma, Inc.