Enliven Therapeutics Announces Clinical Data in CML Patients with Atypical Fusion Transcripts at ASH 2025 Annual Meeting

November 3, 2025

ELVN-001 demonstrates encouraging anti-CML activity in heavily pretreated patients with atypical fusion transcripts

Growing unmet need for patients with atypical transcript e13a3, which is resistant to TKIs targeting the myristoyl pocket

BOULDER, Colo., Nov. 3, 2025 /PRNewswire/ -- Enliven Therapeutics, Inc. (Enliven or the Company) (Nasdaq: ELVN), a clinical-stage biopharmaceutical company focused on the discovery and development of small molecule therapeutics, today announced the Company will present data from the ongoing ENABLE Phase 1a/1b clinical trial of ELVN-001 on a subset of chronic myeloid leukemia (CML) patients, specifically in patients with atypical fusion transcripts, at the 67th Annual American Society of Hematology (ASH) 2025 Annual Meeting and Exposition, taking place December 6-9, 2025, in Orlando, Florida.

"Approximately 2–4% of people living with CML have an atypical BCR::ABL1 fusion transcript – a patient population that is increasing in clinical relevance. The NCCN Guidelines now note that asciminib, an allosteric TKI, is contraindicated for many patients with CML with specific atypical transcripts," said Helen Collins, M.D., Chief Medical Officer of Enliven Therapeutics. "We observed encouraging anti-CML activity in the subset of patients with CML in the ENABLE study with atypical transcripts. These findings provide an early signal of ELVN-001's potential to address a growing unmet medical need where allosteric inhibitors fall short, and we look forward to presenting additional data at ASH 2025."

Abstract Highlights

Patient Demographics
As of the cutoff date of April 28, 2025, six patients with previously treated chronic phase CML who had an atypical transcript received ELVN-001 at doses from 20 mg to 80 mg twice daily (BID) in the dose escalation phase of the ENABLE study. Testing for molecular response is non-standardized for atypical transcripts and was therefore assessed locally by individual molecular response.

Efficacy
Of the six enrolled patients with atypical transcripts, four patients had a baseline transcript available and thus could be assessed for efficacy. ELVN-001 demonstrated encouraging anti-CML activity in patients with atypical transcripts, including in patients with the e13a3 transcript, which is resistant to TKIs targeting the myristoyl pocket.

- One patient with e13a3 was enrolled who had discontinued prior tyrosine kinase inhibitors (TKIs) due to lack of efficacy, had a concurrent diagnosis of myelodysplastic syndrome that was treated with dasatinib plus azacitidine, a prior allogeneic myeloablative stem cell transplant and was last treated with asciminib, which they also discontinued due to lack of efficacy. Upon treatment with ELVN-001 at 80 mg once a day (QD), the patient achieved a > 1 log decrease in transcript and had been in the study for 224 days.
- One patient with e13a3 transcript and T315I/S348L mutations was enrolled who had discontinued prior TKIs due to lack of efficacy, had an allogeneic myeloablative stem cell transplant and was subsequently treated with ponatinib and asciminib (alternating), but discontinued due to intolerance and/or lack of efficacy. Upon treatment with ELVN-001 at 120 mg QD, the patient had a decrease in transcript from 0.95% to 0.15% and had been in the study for 449 days.
- One patient with e19a2 transcript and a T315I mutation was enrolled who had discontinued prior nilotinib, dasatinib, ponatinib, asciminib and a combination of asciminib and ponatinib due to lack of efficacy. Upon treatment with ELVN-001 at 80 mg QD with dose escalation to 120 mg QD, the patient achieved a >1 log decrease in transcript and had been in the study for 505 days.
- One patient with e1a3 transcript was enrolled who had discontinued prior bosutinib due to intolerance (transcript remained >10%) and prior dasatinib, ponatinib and asciminib due to lack of efficacy. The last therapy prior to ELVN-001 was allogeneic stem cell transplantation followed by two donor lymphocyte infusions. Upon treatment with ELVN-001 at 80 mg BID, the patient had a decrease in transcript from 43% to 18% and had been in the study for 80 days.

Safety
ELVN-001 was well-tolerated across all doses, consistent with its selective kinase profile. There were no treatment-emergent adverse events (TEAE) greater than Grade 2 across patients with atypical transcripts who were measurable for efficacy.

Details of the presentation are as follows:
Title: *Preliminary safety and efficacy of ELVN-001, a selective active site inhibitor of BCR::ABL1, in patients with CML driven by atypical fusion transcripts*
Presenter: Andreas Hochhaus, M.D.
Poster Location: Orange County Convention Center - West Halls B3-B4
Poster Session: 632. Chronic Myeloid Leukemia: Clinical and Epidemiological: Poster II
Session Date/Time: Sunday, December 7, 6:00 – 8:00 p.m. ET

Following the presentation, a copy will be available on the "Program Presentations & Publications" section of the Company's website at www.enliventherapeutics.com.

About the ENABLE Trial
The ENABLE study (NCT05304377) is a Phase 1 study of ELVN-001 in patients with previously treated CML. The trial is currently in Phase 1a/1b development and is a dose escalation and expansion trial designed to evaluate safety and tolerability and to determine the recommended dose for further clinical evaluation of ELVN-001 in patients with CML with and without T315I mutations that is relapsed, refractory or intolerant to TKIs. Secondary endpoints include pharmacokinetics, MMR by central quantitative reverse transcriptase polymerase chain reaction, duration of MMR, BCR::ABL1 transcript levels and complete hematologic response. Enliven is preparing for the potential start of a pivotal trial for ELVN-001 in 2026.

About ELVN-001
ELVN-001 is a potent, highly selective, potentially best-in-class small molecule kinase inhibitor designed to specifically target the BCR::ABL gene fusion, the oncogenic driver for patients with chronic myeloid leukemia. As a highly selective active site inhibitor, ELVN-001 has a mechanism of action that is complementary to allosteric BCR::ABL1 inhibitors, which may play an increasingly important role in the standard of care. ELVN-001 was also designed to have activity against the T315I mutation, the most common BCR::ABL1 mutation, which confers resistance to nearly all approved TKIs, as well as activity against mutations known to confer resistance to allosteric BCR::ABL1 inhibitors.

About Enliven Therapeutics
Enliven is a clinical-stage biopharmaceutical company focused on the discovery and development of small molecule therapeutics to help people not only live longer, but live better. Enliven aims to address existing and emerging unmet needs with a precision oncology approach that improves survival and enhances overall well-being. Enliven's discovery process combines deep insights in clinically validated biological targets and differentiated chemistry to design potentially first-in-class or best-in-class therapies. Enliven is based in Boulder, Colorado.

Forward-Looking Statements
This press release contains forward-looking statements (including within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act of 1933, as amended) concerning Enliven and other matters that involve substantial risks and uncertainties. These statements may discuss goals, intentions and potential of our small molecule therapeutics. Forward-looking statements generally include statements that are predictive in nature and depend upon or refer to future events or conditions. Statements that are not historical facts are forward-looking statements. Forward-looking statements are based on current beliefs and assumptions that are subject to risks and uncertainties and are not guarantees of future performance. Actual results could differ materially from those contained in any forward-looking statement as a result of various risks and uncertainties, including, without limitation: Enliven's limited operating history and resources; uncertainty in our ability to advance product candidates through clinical development, obtain regulatory approvals, and successfully commercialize or license them; uncertainty of preclinical and early clinical results, which may not predict success of later clinical trials; potential delays or challenges in clinical trial enrollment, data reliability, and patient retention; potential competition from other therapies; the decision to seek collaborations and develop combination therapies; the ability to hire and retain key personnel; our ability to obtain, maintain and enforce intellectual property for our product candidates; our reliance on third parties for manufacturing, research, and partnerships; geopolitical, market, and macroeconomic conditions; the ability to secure additional capital to support Enliven's operations and R&D; and other risks and uncertainties, including those more fully described in Enliven's filings with the Securities and Exchange Commission (SEC), which may be found in the section titled "Risk Factors" in Enliven's Annual and Quarterly Reports on Form 10-K and 10-Q filed with the SEC and in Enliven's future reports to be filed with the SEC. Except as required by applicable law, Enliven undertakes no obligation to revise or update any forward-looking statement, or to make any other forward-looking statements, whether as a result of new information, future events or otherwise.

This press release contains hyperlinks to information that is not deemed to be incorporated by reference into this press release.

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