June 17, 2024

Mustang Bio Announces Favorable Efficacy and Safety Data from Complete Waldenstrom Macroglobulinemia Cohort of Phase 1/2 Clinical Trial of MB-106, CD20-Targeted Autologous CAR-T Therapy

Overall response rate of 90% in cohort with durable responses observed; one patient remains in complete remission at 31 months

All patients were heavily pretreated/refractory to BTK inhibitors, and only one patient has started new anti-WM treatment after MB-106

Outpatient administration was allowed and found to be feasible

Currently no FDA-approved CAR-T treatments for WM

Data presented at the European Hematology Association 2024 Hybrid Congress

WORCESTER, Mass., June 17, 2024 (GLOBE NEWSWIRE) -- Mustang Bio, Inc. (“Mustang” or the “Company”) (Nasdaq: MBIO), a clinical-stage biopharmaceutical company focused on translating today’s medical breakthroughs in cell therapies into potential cures for difficult-to-treat cancers, today announced that updated data from the ongoing Phase 1/2 clinical trial of MB-106, a CD20-targeted, autologous CAR T-cell therapy, show a favorable safety and efficacy profile in patients with Waldenstrom macroglobulinemia (“WM”), a rare form of blood cancer. MB-106 is being developed in a collaboration between Mustang and Fred Hutch Cancer Center (“Fred Hutch”) to treat patients with relapsed or refractory B-cell non-Hodgkin lymphomas (“B-NHLs”) and chronic lymphocytic leukemia (“CLL”).

The updated results from the single-institution Phase 1/2 clinical trial were presented during a poster session at the European Hematology Association 2024 Hybrid Congress (“EHA2024”) by Brian Till, M.D., Associate Professor and physician at Fred Hutch and University of Washington.

All ten patients in the study were previously treated with Bruton's tyrosine kinase inhibitors (“BTKi”), and their disease continued to progress while on BTKi. Overall, 90% (9/10) of the patients treated with MB-106 responded to treatment, including 3 complete responses, 2 very good partial responses and 4 partial responses. In addition, 1 patient experienced

stable disease. One of the patients who achieved a complete response has remained in remission for 31 months, with an immunoglobulin M (IgM) level that decreased rapidly to the normal range after treatment with MB-106 and has remained normal since. Patients had a median of nine prior lines of therapy and only one patient has started additional anti-WM treatment after being treated with MB-106. From a safety perspective, cytokine release syndrome (CRS) occurred in nine patients: five patients with grade 1 and four patients with grade 2. One patient experienced grade 1 immune effector cell-associated neurotoxicity syndrome (ICANS). No grade 3 or 4 CRS or grade 2, 3 or 4 ICANS has been observed, despite dose escalation.

“We are very encouraged by the safety and efficacy data generated in WM, along with improvements in the quality of responses over time, which demonstrates MB-106 CAR T-cell expansion and persistence,” said Dr. Till.

For more information on the clinical trials, please visitwww.clinicaltrials.gov using the identifier NCT05360238 for the multicenter trial and NCT03277729 for the ongoing trial at Fred Hutch.

Scientists at Fred Hutch played a role in developing these discoveries, and Fred Hutch and its scientists may benefit financially from this work in the future.

The Company’s ability to further develop the MB-106 program for hematologic malignancies is contingent upon raising a significant amount of additional funding and / or consummating a strategic partnership.

About Mustang Bio

Mustang Bio, Inc. is a clinical-stage biopharmaceutical company focused on translating today’s medical breakthroughs in cell therapies into potential cures for difficult-to-treat cancers. Mustang aims to acquire rights to these technologies by licensing or otherwise acquiring an ownership interest, to fund research and development, and to outlicense or bring the technologies to market. Mustang has partnered with top medical institutions to advance the development of CAR-T therapies. Mustang’s common stock is registered under the Securities Exchange Act of 1934, as amended, and Mustang files periodic reports with the U.S. Securities and Exchange Commission (“SEC”). Mustang was founded by Fortress Biotech, Inc. (Nasdaq: FBIO). For more information, visit www.mustangbio.com.

Forward-Looking Statements

This press release contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, each as amended. Such statements, which are often indicated by terms such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “goal,” “intend,” “look forward to,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” and similar expressions. The Company’s forward-looking statements, include, but are not limited to, any statements relating to our growth strategy and product development programs, including the timing of and our ability to make regulatory filings such as INDs and other applications and to obtain regulatory approvals for our product candidates, statements concerning the potential of therapies and product candidates and any other statements that are not historical facts. Actual events or results may differ materially from those described in this press release due to a number of risks and uncertainties. Risks and uncertainties include, among other things, our need for substantial additional funds in the immediate future, risks that any actual or

potential clinical trials described herein may not initiate or complete in sufficient timeframes to advance the Company's corporate objectives, or at all, or that promising early results obtained therefrom may not be replicable, risks related to the satisfaction of the conditions necessary to transfer the lease of the Company's manufacturing facility to a potential transferee and receive the contingent payment in connection with the sale of such facility in the anticipated timeframe or at all; whether the purchaser of the Company's manufacturing facility is able to successfully perform its obligation to produce the Company's products under the manufacturing services agreement on a timely basis and to acceptable standards; disruption from the sale of the Company's manufacturing facility making it more difficult to maintain business and operational relationships; negative effects of the announcement or the consummation of the transaction on the market price of the Company's common stock; significant transaction costs; the development stage of the Company's primary product candidates, our ability to obtain, perform under, and maintain financing and strategic agreements and relationships; risks relating to the results of research and development activities; risks relating to the timing of starting and completing clinical trials; uncertainties relating to preclinical and clinical testing; our dependence on third-party suppliers; our ability to attract, integrate and retain key personnel; the early stage of products under development; government regulation; patent and intellectual property matters; competition; as well as other risks described in Part I, Item 1A, "Risk Factors," in our Annual Report on Form 10-K filed on March 11, 2024, subsequent Reports on Form 10-Q, and our other filings we make with the SEC. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations or any changes in events, conditions or circumstances on which any such statement is based, except as required by law, and we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995.

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Source: Mustang Bio, Inc.