Biomea Fusion Announces 2022 Clinical Development Plan to Initiate Studies in up to Seven Different Tumor Types and in Diabetes for BMF-219

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REDWOOD CITY, Calif., Jan. 10, 2022 (GLOBE NEWSWIRE) -- Biomea Fusion, Inc. (“Biomea”) (Nasdaq: BMEA), a clinical-stage biopharmaceutical company dedicated to the discovery and development of novel irreversible small molecules to treat and improve the lives of patients with genetically defined cancers and metabolic diseases, announced today that in 2022 it plans to initiate clinical studies to dose its irreversible covalent menin inhibitor, BMF-219, in up to seven different cancer indications as well as in diabetes. Biomea is also confirming the preclinical development timeline of its second program, which the company is on track to announce in the first half of 2022 with an Investigational New Drug application (IND) planned within 12 months of candidate selection.

BMF-219 is designed to be a highly selective, orally bioavailable small-molecule irreversible inhibitor of menin. Menin, a protein involved in transcriptional regulation, impacting cell cycle control, apoptosis, and DNA damage repair, plays a direct role in oncogenic signaling in multiple cancers. The menin complex plays a critical role in MYC-dependent oncogenic signaling, whereby menin enhances MYC-mediated transcription to promote cancer progression. Inhibition of menin is a novel approach to cancer treatment. Nonclinical studies of BMF-219 have shown sustained potent abrogation of menin-dependent oncogenic signaling and pathway control *in vitro* and *in vivo.* BMF-219 demonstrated consistent on-target inhibition with a strong anti-proliferative effect on various menin-dependent acute myeloid leukemia (AML) cell lines; diffuse large B-cell lymphoma (DLBCL) cell lines representing categories of Double/Triple Hit Lymphoma (DHL/THL) and Double Expressor Lymphoma (DEL); and multiple myeloma (MM) cell lines harboring diverse mutational backgrounds, including MYC dysregulation. BMF-219 also exhibited high potency in *in vitro* KRAS-driven cancer cell models. MYC, which exerts much of its oncogenic activity through interaction with menin, is a major downstream effector of the KRAS pathway. As previously announced, BMF-219 was also able to normalize glucose levels in both diabetic preclinical models studied with the glucose tolerance and homeostasis effect maintained despite complete washout of BMF-219.

In 2021, Biomea transformed into a clinical stage company with the initiation of BF-MNN-101, its first Phase I clinical trial of BMF-219. The trial is designed to assess BMF-219’s control of menin’s negative impact on patients with relapsed/refractory acute myeloid leukemia (AML) and acute lymphocytic leukemia (ALL). Biomea is confirming its clinical development plans to initiate additional clinical studies of BMF-219 in the following liquid tumors —MM and DLBCL— in the first half of 2022, and the following solid tumors —non-small cell lung cancer (NSCLC), pancreatic cancer, an colorectal cancer (CRC)— in the fourth quarter of 2022. In addition, subject to submission and clearance of an IND, Biomea plans to initiate a Phase I/II clinical trial of BMF-219 in diabetes during the second half of 2022.

“The preclinical profile of BMF-219 is highly compelling due both to its strong control of the menin pathway and very favorable safety profile. I am excited for Biomea to explore the clinical potential of this first-in-class and first-in-human irreversible menin inhibitor in multiple tumor types. We now know that the menin pathway is central to multiple cancer types. Targeting menin with a covalent binder is a very innovative approach and oncologists are eager to utilize BMF-219 for these patients who have limited therapeutic options,” said Steve Morris, MD, Independent Medical Oncologist and Leukemia/Lymphoma Expert, Retired Faculty Member, Yale University School of Medicine and St. Jude Children’s Research Hospital; who performed basic and translational research regarding menin-driven leukemias and cared for patients with these malignancies during his 30-year career in academic medicine.

“From the very beginning, we recognized menin as a key node in the oncogenic pathways of a broad array of tumors. We are very excited about what we have learned over the past years in preclinical studies with our irreversible menin inhibitor, BMF-219. Having observed essentially complete pathway control with consistent on-target effect across multiple tumor types, these studies demonstrated that BMF-219 has the potential to irreversibly inhibit the function of menin while maintaining a wide safety margin. These results have validated our plans to pursue BMF-219 for the treatment of 7 select liquid and solid tumors which we are planning to initiate during this year,” said Thomas Butler, CEO and Chairman of the Board. “We have also completed the preclinical validation of BMF-219 for the treatment of diabetes with two important animal models and are now preparing the IND to support the initiation of a Phase I/II clinical trial to begin in the second half of this year.”

About Irreversible Menin Inhibitor BMF-219 Target Indications

Acute Myeloid Leukemia (AML) and Acute Lymphocytic Leukemia (ALL)
AML is the most common form of acute leukemia in adults and represents the largest number of annual leukemia deaths in the U.S. and Europe. AML originates within the white blood cells in the bone marrow and can rapidly move to the blood and other parts of the body, including the lymph nodes, spleen, and central nervous system. Approximately 20,000 people in the U.S are diagnosed with AML each year, and the five-year overall survival rate in adults is roughly 29% (Source: NCI SEER Data). Among patients with relapsed/refractory disease, the need is greatest, as the overall survival is approximately 3 to 9 months. It is estimated that upwards of 45% of AML patients have menin dependent genetic drivers (MLL-r or NPM1). ALL is a less common leukemia, with approximately 6,000 new cases in the U.S. each year and a higher five-year survival rate of nearly 70% (Source: NCI SEER Data). Between 10-15% of adult ALL patients and 60-70% of pediatric ALL patients have MLL-r translocations.

Multiple Myeloma (MM)
MM is a cancer of plasma cells, which make antibodies (immunoglobulins) and are mainly located in the bone marrow. As cancerous cells migrate from the bone marrow, organ damage due to excess immunoglobulins in bones and blood and weakening of bones are common features.

Approximately 35,000 people in the U.S. are diagnosed with MM each year and the 5-year relative survival rate is ~56% (Source: NCI SEER Data). Among patients with relapsed or refractory disease, the need is greatest, with overall survival as low as 6 months in some patients. Additionally, it is estimated that more than 60% of MM patients have menin dependent genetic drivers (MYC addicted or driven) and that these drivers are more common in the relapsed or refractory setting.

Diffuse Large B-Cell Lymphoma (DLBCL)
DLBCL is the most common subtype of Non-Hodgkin Lymphoma. DLBCL starts in white blood cells called lymphocytes and it usually grows in lymph nodes. Every year, approximately ~18,000 people in the U.S. are diagnosed with DLBCL (Source: NCI SEER Data). Following initial treatment with standard chemotherapy, approximately 70% of patients have a complete response and approximately 50% of patients are cured. For patients with relapsed or refractory DLBCL, median overall survival is between 6-7 months. Double Hit Lymphomas (DHL), Triple Hit Lymphomas (THL), and Double Expressor Lymphomas (DEL) are high grade B-cell lymphomas (HGBLs) that have high MYC and BCL2 dependency. Based on their aggressive nature, DHL, THL, and DEL represent a large portion of the relapsed or refractory DLBCL population.

Non-Small Cell Lung Cancer (NSCLC)
Non-Small Cell Lung Cancer is the most common form of lung cancer, representing ~84% of all lung cancer cases or approximately 200,000 cases in the U.S. each year (Source: NCI SEER Data). Additionally, the five-year survival rate of NSCLC is ~25%. While lung cancer is the 3rd most common form of cancer in the U.S. based on incidence, lung cancer contributes to the highest number of annual cancer deaths in the U.S.. KRAS is the most frequent oncogene in NSCLC, occurring in ~30% of patients with NSCLC.

Pancreatic Cancer
Pancreatic cancer is a relatively rare form of cancer in the U.S., representing approximately 60,000 cases in the U.S. each year (Source: NCI SEER Data). Pancreatic cancer is an aggressive cancer with a very low five-year survival rate of ~11%, indicating that there is a large unmet need. It is rarely diagnosed early, contributing to the low survival rate. Among patients with pancreatic cancer, RAS mutations (including KRAS) occur in up to approximately 98% of patients.

Colorectal Cancer (CRC)
Colorectal cancer is the fourth most common form of cancer in the U.S., representing approximately 150,000 cases in the U.S. each year (Source: NCI SEER Data). These cancers start in the rectum or the colon and can be diagnosed/identified early, even potentially as noncancerous polyps. The five-year survival rate of CRC is approximately 65%. Among other mutations, KRAS mutations occur in approximately 50% of patients with CRC.

Diabetes
Diabetes mellitus is characterized by a reduced ability to produce insulin and/or by a dysregulated response to insulin and affects nearly 34 million people in the U.S. (Source: CDC). Diabetes is grouped into a few clinical categories based on etiology or timing of diagnosis according to the latest guidance from the American Diabetes Association. Accounting for 1.6 million diagnosed patients in the U.S., Type 1 diabetes is due to autoimmune beta-cell destruction, usually leading to absolute insulin deficiency, including latent autoimmune diabetes of adulthood. Type 2 diabetes has been diagnosed in approximately 25.3 million people in the U.S. and is due to a progressive loss of adequate beta-cell insulin secretion frequently on the background of insulin resistance. The primary treatment goal is to achieve glycemic control by reducing HbA1c (A1c), a marker for the amount of sugar in the bloodstream, to 6.5% or lower. Glycemic control is a validated approach to delaying disease progression, which leads to significant and potentially fatal renal, cardiac, neurological, and ophthalmic comorbidities.

About Biomea Fusion

Biomea Fusion is a biopharmaceutical company focused on the discovery and development of irreversible small molecules to treat patients with genetically defined cancers and metabolic diseases. An irreversible small molecule is a synthetic compound that forms a permanent bond to its target protein and offers a number of potential advantages over conventional reversible drugs, including greater target selectivity, lower drug exposure, and the ability to drive a deeper, more durable response. The company is utilizing its proprietary FUSION™ discovery platform to advance a pipeline of irreversible-binding therapeutic agents against key oncogenic drivers of cancer and metabolic diseases. Biomea Fusion's goal is to utilize its capabilities and platform to become a leader in developing irreversible small molecules in order to maximize the clinical benefit when treating various cancers and metabolic diseases.

Forward-Looking Statements

Statements we make in this press release may include statements which are not historical facts and are considered forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These statements may be identified by words such as "aims," "anticipates," "believes," "could," "estimates," "expects," "forecasts," "goal," "intends," "may," "plans," "possible," "potential," "seeks," "will," and variations of these words or similar expressions that are intended to identify forward-looking statements. Any such statements in this press release that are not statements of historical fact, including statements regarding the clinical and therapeutic potential of our product candidates and development programs, including BMF-219, the potential of BMF-219 as a treatment for various types of cancer and diabetes, our research, development and regulatory plans, including our plans to discuss with regulators the potential clinical development of BMF-219 and our plans to file INDs and initiate clinical trials, and the timing of such events, may be deemed to be forward-looking statements. We intend these forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 27A of the Securities Act and Section 21E of the Exchange Act and are making this statement for purposes of complying with those safe harbor provisions.

Any forward-looking statements in this press release are based on our current expectations, estimates and projections only as of the date of this release and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements, including the risk that we may encounter delays in patient enrollment and in the initiation, conduct and completion of our planned clinical trials. These risks concerning Biomea Fusion's business and operations are described in additional detail in its periodic filings with the SEC, including its most recent period report filed with the SEC and subsequent filings thereafter. Biomea Fusion explicitly disclaims any obligation to update any forward-looking statements except to the extent required by law.

Contact:

Van Sandwick

Director, Investor Relations & Corporate Development
vsandwick@biomeafusion.com
(650) 460-7759