QUICK FACTS – Biomea Corporate Overview and Programs

Overview

We are a clinical-stage biopharmaceutical company focused on the discovery and development of covalent small molecule drugs to treat patients with genetically defined cancers and metabolic diseases. A covalent small molecule drug is a synthetic compound that forms a permanent bond to its target protein and offers a number of potential advantages over conventional non-covalent drugs, including greater target selectivity, lower drug exposure, and the ability to drive a deeper, more durable response. Leveraging our extensive expertise in covalent binding chemistry and development, we built our proprietary FUSION™ System discovery platform to advance a pipeline of novel covalent small molecule product candidates.

Our lead product candidate, BMF-219, is designed to be an orally bioavailable, potent and selective covalent inhibitor of menin, an important transcriptional regulator known to play a direct role in oncogenic signaling in multiple cancers. In preclinical studies, administration of BMF-219 resulted in robust anti-tumor responses across a range of liquid and solid tumor models and has been generally well-tolerated in animal studies. Additionally, administration of BMF-219 produced a pronounced effect in preclinical models of diabetes, normalizing glucose levels during treatment and even after drug washout. As of December 31, 2022, BMF-219 is being evaluated in up to 8 liquid and solid tumor types and in type 2 diabetes across 3 ongoing clinical trials.

Beyond BMF-219, we are utilizing our novel FUSION™ System to pioneer covalent treatments against other high-value genetic drivers of disease. In May 2022, we announced our second development candidate, BMF-500, a covalent inhibitor of FLT3. We expect to file an IND to study BMF-500 in acute leukemias in the first half of 2023.

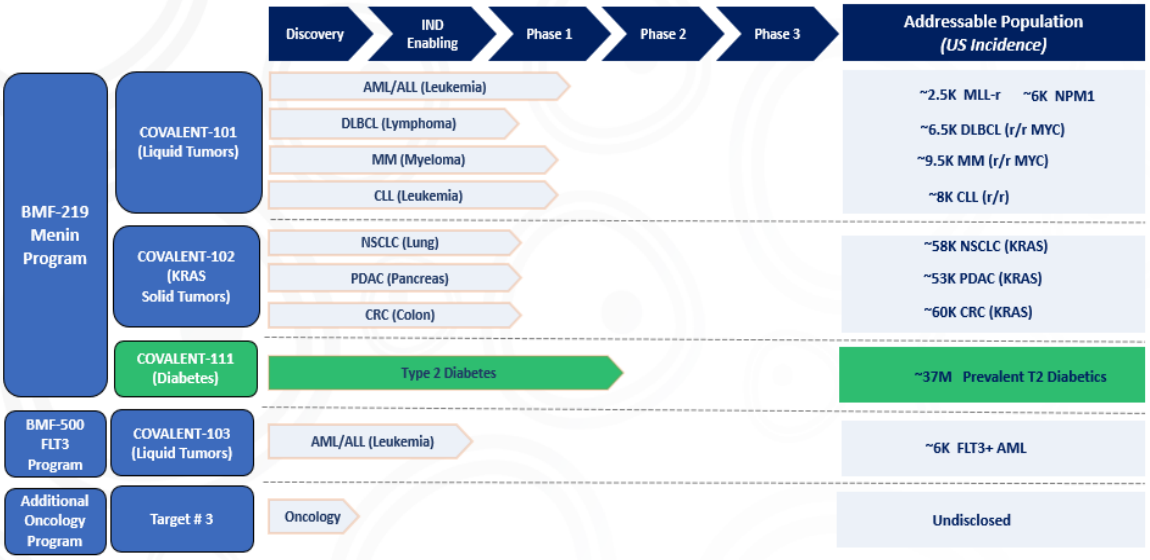
We are currently advancing additional preclinical covalent small molecule programs for the treatment of select cancers and expect to nominate our third development candidate in the first half of 2023. Our goal is to utilize our capabilities and platform to become a leader in developing covalent small molecules to maximize the depth and durability of clinical benefit when treating various cancers.

After working closely together at Pharmacyclics, our Chief Executive Officer and Chairman of the Board of Directors, Thomas Butler, and Chief Operating Officer and President, Ramses Erdtmann, founded Biomea Fusion in 2017 with the goal of developing targeted therapies for patients suffering from genetically defined cancers. Our management team has significant experience in precision oncology and in progressing products from early-stage research to clinical trials and ultimately to regulatory approval and commercialization. Together, with a group of former colleagues, they bring in-house expertise in medicinal chemistry, biology, translational medicine, computational biology, and chemistry, in vitro and in vivo pharmacology, biomarker development, and manufacturing. We have also established internal expertise in clinical development, clinical operations, pharmacovigilance, clinical pharmacology, regulatory, and quality. Other members of the management team have held various positions at Genentech, Gilead Sciences, Pharmacyclics and Celera. We are supported by our board of directors, scientific advisory board, and a leading syndicate of investors.

Our Programs

We believe that covalent small molecules have the potential to address the key limitations of existing reversible therapeutics and to treat diseases where targeted therapies are not yet approved. While as an organization we have not yet obtained approval to commercialize any of our product candidates and our management's past

experience, including development of the covalent small molecule BTK inhibitor ibrutinib, does not guarantee similar results or success for our company, we believe such experience of our management team makes us well-positioned to address this opportunity and is a key competitive advantage. The following table summarizes our wholly owned research and development pipeline:



Biomea's current pipeline and potentially addressable patient population

BMF-219

Our lead product candidate, BMF-219, is designed to be an orally bioavailable, potent, and selective covalent inhibitor of menin, a ubiquitously expressed scaffold protein that impacts multiple cellular processes including cell cycle control, apoptosis, and DNA damage repair. Preclinical studies of BMF-219 have shown sustained potent abrogation of menin-dependent oncogenic signaling and pathway control in vitro, ex vivo 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); chronic lymphocytic leukemia (CLL) ex vivo models; and multiple myeloma (MM) cell lines harboring diverse mutational backgrounds, including MYC dysregulation. BMF-219 also exhibited high potency in in vitro and ex vivo 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.

BMF-219 Oncology Programs

BMF-219 is a covalent menin inhibitor being developed for the treatment of cancers that are highly dependent on menin. Currently we are enrolling COVALENT-101, a Phase 1 clinical trial to explore the safety and efficacy of BMF-219 in patients with relapsed/refractory AML and ALL, including those with MLL/KMT2A gene rearrangements or NPM1 mutations (NCT05153330). The study includes various cohorts of patients to explore the potential utility of BMF-219 across a range of menin-dependent hematologic malignancies including MM, DLBCL,

and CLL. We have also initiated and are now enrolling COVALENT 102, a Phase 1/1b clinical trial of BMF-219 in patients with unresectable, locally advanced, or metastatic non-small cell lung cancer (NSCLC), colorectal cancer (CRC) and pancreatic ductal adenocarcinoma (PDAC) with an activating KRAS mutation (NCT05631574).

BMF-219 Diabetes Program

Additionally, we released data on the observed effects of administration of BMF-219 in multiple preclinical diabetes models. Loss of functional beta cell mass is a core component of the natural history in both types of diabetes — type 1 diabetes (mediated by autoimmune dysfunction) and type 2 diabetes (mediated by metabolic dysfunction). Beta cells are found in the pancreas and are responsible for the synthesis and secretion of insulin, a hormone that helps regulate the body's capacity to absorb, metabolize, and convert glucose for energy. In patients with diabetes, beta cell mass and function are diminished, leading to insufficient insulin secretion and hyperglycemia. Menin is thought to act as a brake on beta cell turnover / beta cell growth, supporting the notion that inhibition of menin could lead to the regeneration of normal healthy beta cells. Based on these and other scientific findings, Biomea is exploring the potential for menin inhibition as a viable therapeutic approach to improve beta cell health and mass, and thus potentially treat an underlying driver of diabetes. We are currently also enrolling COVALENT-111, a Phase I/II clinical trial of BMF-219 in healthy volunteers (Phase I) and adults with type 2 diabetes uncontrolled by current therapies (Phase II) in the US and Canada (NCT05731544). The Phase I portion has been successfully completed and we are currently enrolling patients with type 2 diabetes at multiple sites in the US and Canada.

Additional Programs

We are currently advancing additional preclinical covalent small molecule programs for the treatment of select cancers and are on track to file investigational New Drug Application for BMF-500 in the first half of 2023 to initiate COVALENT-103, a study of the covalent FLT3 inhibitor in patients with acute leukemia. We expect to announce our third development candidate in the first half of 2023. Each of these programs will pursue novel protein targets that we believe should have single agent activity and also have the potential to achieve a synergistic anti-tumor effect when combined with BMF-219.

Our Strategy

Our goal is to discover and develop covalent small molecules to treat patients with genetically defined cancers. The key elements of our business strategy to achieve this goal include:

- Deploy our covalent platform against high-value oncogenic drivers of cancer;
- Continue to advance our lead product candidate, BMF-219, through clinical development;
- Continue to expand our portfolio of covalent small molecule product candidates;
- Evaluate opportunities to enhance the potential of our programs in collaboration with third parties;
- Maintain our entrepreneurial outlook, scientifically rigorous approach, and culture of tireless commitment to patients.

Key Advantages of Covalent Inhibition

Since the discovery of aspirin in 1899, drugs that form permanent bonds with their target (covalent drugs)

have been known to offer a number of potential safety, tolerability and efficacy advantages over conventional reversible drugs through multiple mechanisms, including:

- High selectivity: Covalent drugs have the potential to confer high selectivity to a target by interacting with the unique surrounding structural elements of the protein and establishing a covalent bond to a key residue in the binding site. Leveraging non-covalent and covalent interactions can lead to greater selectivity versus reversible compounds, which rely solely on non-covalent binding. This has the potential to reduce the likelihood of non-specific, off-target interactions that often lead to safety and tolerability concerns.
- Deep inactivation of target: Upon binding, a covalent inhibitor may not only cause inactivation of the target, but may also result in the elimination of the target through normal cellular degradation processes. The diseased cell then either undergoes rapid apoptosis or differentiation into a normal, mature cell. Such transformation has the potential to provide the patient with a durable, lasting benefit.
- Greater therapeutic window: Covalent inhibitors are designed to create a permanent bond with high affinity and long residence time. Unlike conventional reversible drugs, which typically need to be present at higher concentrations to provide benefit, covalent drugs have the potential to maintain their effect in the absence of sustained drug exposure. The permanent inhibition of target function upon covalent binding essentially uncouples pharmacodynamics (drug effects) (PD) from pharmacokinetics (drug exposure) (PK) as target inhibition persists after the drug has been cleared from the system. This property of covalent drugs can potentially lead to lower dosing requirements and less frequent dosing regimens versus reversible approaches.

Our Fusion System Discovery Platform

We believe that covalent small molecules have the potential to address the key limitations of existing reversible therapeutics and treat diseases where targeted therapies are not yet approved. Leveraging our extensive experience developing covalent drugs and covalent binding chemistry expertise, we built our proprietary FUSION™ System to enable the design and development of novel covalent small molecule product candidates against high-value oncogenic drivers of cancer. The system also has the capability to create a novel non-covalent inhibitor, which we may advance depending on the target. Our FUSION™ System discovery platform encompasses the following:

- **Target Selection Validation and AI/VR Matching**: We use our expertise in structural biology and covalent binding chemistry to identify both validated and novel targets that we believe may have a demonstrable and specific impact on disease and have particular structural characteristics that would be amenable to direct intervention with a covalent binder.
- **Custom Scaffold Creation:** We create novel chemical scaffolds using a computational platform to exploit the unique structural elements of a specific target protein. We then screen these scaffolds with in-house technologies to select the optimal candidates for further construction and design. This evaluation process is intended to increase the probability of having multiple targeted compounds that can advance through the discovery process and into the clinic.
- **Molecule Optimization/Refinement:** Using our proprietary suite of computational technologies, assays, analytical approaches, chemistry, and know-how we strive to maximize the potential selectivity, potency, safety, and convenience of our oral, covalent small molecule product candidates. We avoid compound library screening, which results in highly selective/specified scaffolds. We believe this saves considerable time during the lead optimization step.