Epirium Bio to Present MF-300 Preclinical Data at the International Conference on Frailty and Sarcopenia Research

Data show MF-300, a First-in-Class 15-PGDH Enzyme Inhibitor, Improves Aged Muscle Quality and Accelerates Recovery of Muscle Function Following Nerve Injury

San Diego, March 13, 2025. Epirium Bio Inc. (Epirium), a clinical stage biopharmaceutical company advancing medicines for neuromuscular and fibrotic diseases, today announced the upcoming presentation of two scientific posters featuring preclinical data on MF-300 at the International Conference on Frailty and Sarcopenia Research (ICFSR), taking place March 12-14, 2025, in Toulouse, France. These presentations highlight the beneficial effects of MF-300 on muscle function in mouse models of aging.

MF-300 is an investigational, orally administered, inhibitor of 15-hydroxyprostaglandin dehydrogenase (15-PGDH), an enzyme transcriptionally upregulated in aged muscle that inactivates prostaglandin E2 (PGE2). By inhibiting 15-PGDH, MF-300 increases physiologic levels of PGE2, which has been shown to benefit muscle function in preclinical studies.

Sarcopenia, defined as age-related muscle weakness, is caused by reductions in muscle quality and quantity. Reduced muscle quality, or force generating capacity of muscle tissue independent of quantity, causes age-related decline in strength exceeding the strength loss in muscle quantity alone. Moreover, clinical studies suggest that increases in muscle quantity alone may not be sufficient to prevent age-related muscle weakness. Thus, Epirium's approach leverages PGE2's beneficial effects to increase strength by improving muscle quality, addressing an unmet medical need in sarcopenia.

The aged mouse is a standard preclinical model for strength declines that occur with aging. To study MF-300's effect on aged muscle strength, Epirium measures isometric force of plantar flexion, muscle function that weakens with age in both humans and mice. The data presented at ICFSR shows that oral administration of MF-300 significantly increased muscle force in aged mice. This muscle strength benefit in the MF-300 treated aged mice cohort was independent of changes in muscle mass, demonstrating improved force generating capacity of the muscle tissue (i.e., muscle quality).

Progressive muscle denervation is another important contributor to sarcopenia. Sciatic nerve injury in mice is an established model of neurogenic muscle atrophy that recapitulates aspects of the reinnervation repair process that diminishes with aging. The data presented at ICFSR shows that oral administration of MF-300 significantly accelerated recovery of muscle force following nerve injury in mice.

Taken together, these two presentations demonstrate MF-300's potential to positively affect muscle quality and innervation, core components of sarcopenia. "These data are exciting for a couple of reasons. First, they demonstrate that MF-300 improved the intrinsic force generating capacity of aged muscle, or muscle quality. Second, the data suggest that MF-300 has additional benefit when it comes to enhancing reinnervation," said Micah Webster, Ph.D., Senior Director of Translational Science at Epirium. "By addressing these key biological drivers of sarcopenia, MF-300 has the potential to deliver meaningful therapeutic benefit for individuals with sarcopenia."

MF-300 is currently in a Phase 1 clinical trial to study its safety, pharmacokinetics, and pharmacodynamics in healthy human subjects.

Details of the poster presentations include:
Title: MF-300 (15-PGDH Enzyme Inhibitor) Reverses Age-Related Muscle Weakness in Mice by Restoring Muscle Quality- **Poster Number**: P082
Presenter: Micah Webster, Ph.D.
Presentation Date: The poster presentation is scheduled for March 13-14, 2025

Title: MF-300 (15-PGDH Enzyme Inhibitor) Accelerates Recovery of Muscle Force in a Mouse Model of Nerve Injury- **Poster Number**: P084
Presenter: Micah Webster, Ph.D.
Presentation Date: The poster presentation is scheduled for March 13-14, 2025

Both presentations will be available in the "Posters and Publications" section of Epirium's website, www.epirium.com.

About the MF-300 Phase 1 Clinical Trial
The Phase 1 clinical trial is a two-part, randomized, double-blind, placebo controlled, dose-escalation study designed to assess the safety, pharmacokinetics, and pharmacodynamics of single (Part 1) and multiple ascending doses (Part 2) of MF-300. The Company anticipates reporting topline results in the second half of 2025.

About MF-300
MF-300 is an investigational, orally bioavailable small molecule that reversibly occupies the prostaglandin E2 (PGE2) binding site of 15-hydroxyprostaglandin dehydrogenase (15 PGDH). 15-PGDH is an enzyme that converts PGE2 to an inactive metabolite and is transcriptionally upregulated in aged muscle. Target engagement by MF-300 inhibits 15-PGDH activity and increases physiologic levels of PGE2 in skeletal muscle in preclinical studies and raises PGE2 levels in cell-based assays. PGE2 plays a crucial role in promoting aged muscle strength by improving muscle quality (i.e., muscle strength independent of muscle mass) as well as function of the neuromuscular junction in preclinical studies. Inhibiting 15-PGDH in aged muscle may be a strategy to increase physiologic levels of PGE2 to improve muscle quality and function in sarcopenia.

About Epirium Bio
Epirium, a biopharmaceutical company based in San Diego, California, has identified and established an IP-protected platform of orally bioavailable small molecules that constitute a new class of therapeutics with the potential to improve function in neuromuscular diseases, including sarcopenia and spinal muscular atrophy. Epirium has generated preclinical data in a broader scope of indications with significant unmet medical need, including fibrosis, which Epirium's development pipeline has the potential to address.

To learn more about Epirium, please visit www.epirium.com and follow us on LinkedIn.

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