February 25, 2025

# TNF Pharmaceuticals Initiates Phase 2b Clinical Trial of First Oral TNF-Alpha Inhibitor

***Fully funded multi-center study initiated at University of Florida to further explore efficacy of isomyosamine for preventing progressive muscle loss and frailty***

***Study builds on positive results achieved in earlier Phase 2a trial***

***TNF-alpha inhibitor market estimated at $40+ billion with no FDA-approved oral treatments***

BALTIMORE--(BUSINESS WIRE)-- TNF Pharmaceuticals, Inc. (Nasdaq: TNFA) ("TNF" or the "Company"), a clinical stage biopharmaceutical company committed to developing novel therapies for autoimmune and inflammatory conditions, today announced the initiation of a fully funded Phase 2b clinical trial evaluating oral TNF-alpha (TNF-α) inhibitor drug candidate isomyosamine as a treatment for chronic inflammation associated with muscle loss (frailty or sarcopenia) in patients who have undergone hip or femur fracture repair surgery.

"The initiation of our Phase 2b isomyosamine trial marks an important milestone in our mission to develop a novel science for immuno-metabolic regulation and increased longevity," said Mitchell Glass, M.D., President and Chief Medical Officer of TNF. "A deeper exploration of isomyosamine's efficacy will be studied in patients with acute post-surgical inflammation and complications from hip or femur fractures. In addition to further functional decline, these patients face a higher likelihood of complications that can compromise or delay recovery and are associated with higher healthcare costs."

According to Jay Magaziner, Ph.D., Director of the Center for Research on Aging at the University of Maryland and founder of the Baltimore Hip Studies project that evaluates outcomes after hip fractures in older patients, "After hip fracture, older patients can precipitously lose bone, muscle, and function, which is associated with a systemic inflammatory response. If we can block this inflammatory response, we have a chance to reduce the amount of muscle loss and the associated functional loss, leading to better outcomes in hip fracture among older persons."

The upcoming Phase 2b trial to be initiated at the University of Florida is a randomized, placebo-controlled, double-blind study evaluating the efficacy and safety of isomyosamine in reducing inflammation in patients with sarcopenia undergoing fracture repair. Sixty patients will be treated with isomyosamine or placebo for up to 90 days after surgery. The study will measure the extent and time course of recovery to evaluate functional improvement, comparing active dosing to placebo.

The site's principal investigator is Porter Young, M.D., an assistant professor of orthopaedic

surgery and rehabilitation at the University of Florida. His research centers on acetabulum fractures, pelvis fractures, periarticular fractures and management of polytrauma patients.

Isomyosamine is an oral, next-generation TNF-α inhibitor with the potential to transform the way TNF-α based diseases are treated due to its selectivity and ability to cross the blood brain barrier. Its ease of oral dosing is a significant differentiator compared to currently available TNF-α inhibitors, all of which require delivery by injection or infusion. Isomyosamine has also been shown to selectively block TNF-α action where it is overactivated without preventing it from doing its normal job of responding to routine infection. In addition, in early clinical studies it has not been associated with serious side effects known to occur with traditional immunosuppressive therapies that treat inflammation.

**Burden of Sarcopenia**

Sarcopenia (ICD-10-CM code M62.84) affects approximately 10% to 16% of the elderly worldwide.[1] It is also estimated to affect more than 1 in every 10 young adults of most ethnicities.[2] Based on conservative calculations, at least 50 million people were affected by sarcopenia in 2018, and the disease is projected to affect over 200 million over the next four decades due to the growing elderly population.[3]

The sarcopenia treatment market is estimated to be $3.07 billion in 2024 and is expected to grow at a compound annual growth rate (CAGR) of 4.5% to $4.0 billion by 2029.[4] With no FDA-approved treatments for sarcopenia, the estimated $40+ billion in related hospitalization costs is a considerable economic burden on the U.S. healthcare system.[5]

The global market value for TNF inhibitor drugs was estimated to be $39.7 billion in 2024. Growing at an expected CAGR of 3.6% for the next five years, the TNF inhibitor market is expected to reach $47.3 billion by 2029.[6]

**About Isomyosamine**

Isomyosamine is a novel plant alkaloid small molecule shown to regulate the immuno-metabolic system through the modulation of numerous pro-inflammatory cytokines including TNF-alpha (TNF-α), an immune cell signaling protein and inflammatory cytokine responsible for inducing and maintaining the inflammatory process. TNF-α is located upstream of a cascade of molecular signals that induces inflammation and helps activate the process of aging. Many in vivo and in vitro studies have shown that TNF-α plays a causative role in the pathogenesis of various age-related diseases.

---

[1] Metabolism journal, Epidemiology of sarcopenia: Prevalence, risk factors, and consequences (2023)

[2] Metabolism journal, Sarcopenia in youth (2023)

[3] *Biology*, Sarcopenia Is Associated with an Increased Risk of Postoperative Complications… (2023)

[4] Mordor Intelligence, Sarcopenia Treatment Market Size & Share Analysis - Growth Trends & Forecasts (2024 - 2029)

[5] *Journal of Frailty & Aging,* Economic Impact of Hospitalizations in US Adults with Sarcopenia (2019)
[6] Mordor Intelligence, TNF Inhibitors Market Size (2024 - 2029)

**About TNF Pharmaceuticals, Inc.**

TNF Pharmaceuticals, Inc. (Nasdaq: TNFA), a clinical stage pharmaceutical company committed to extending healthy lifespan, is focused on developing two novel therapeutic platforms that treat the causes of disease rather than only addressing the symptoms. Isomyosamine is a drug platform based on a clinical stage small molecule that regulates the immune system to control TNF-α, which drives chronic inflammation and other pro-inflammatory cell signaling cytokines. Isomyosamine is being developed to treat diseases and disorders marked by acute or chronic inflammation. The Company's second drug platform, Supera-CBD, is being developed to treat chronic pain, addiction and epilepsy. Supera-CBD is a novel synthetic derivative of cannabidiol (CBD) and is being developed to address and improve upon the rapidly growing CBD market, which includes both FDA approved drugs and CBD products not currently regulated as drugs. For more information, visit www.tnfpharma.com**.**

**About the University of Florida**

The University of Florida is a premier academic institution that has repeatedly ranked as one of the top five public universities in the country, according to U.S. News & World Report. With campuses in Gainesville and Jacksonville, UF's health sciences centers and colleges attract the brightest students, scholars, scientists and health care providers from across the country and abroad.

UF faculty conducted a record $1.26 billion in research in fiscal year 2024.

**Cautionary Statement Regarding Forward-Looking Statements**

This press release may contain forward-looking statements. These forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements to be materially different from any expected future results, performance, or achievements. Forward-looking statements speak only as of the date they are made and neither the Company nor its affiliates assume any duty to update forward-looking statements. Words such as "anticipate," "believe," "could," "estimate," "expect," "may," "plan," "will," "would'' and other similar expressions are intended to identify these forward-looking statements. Examples of such statements include, but are not limited to, statements regarding the Company's ability to launch, the success and timing of, the Company's planned trial of isomyosamine (MYMD-1®) as a treatment for GLP-1-induced sarcopenia and frailty. Important factors that could cause actual results to differ materially from those indicated by such forward-looking statements include, without limitation: the Company's ability to maintain compliance with the Nasdaq Stock Market's listing standards; the timing of, and the Company's ability to, obtain and maintain regulatory approvals for clinical trials of the Company's pharmaceutical candidates; the timing and results of the Company's planned clinical trials for its pharmaceutical candidates; the amount of funds the Company requires for its pharmaceutical candidates; increased levels of competition; changes in political, economic or regulatory conditions generally and in the markets in which the Company operates; the Company's ability to retain and attract senior

management and other key employees; the Company's ability to quickly and effectively respond to new technological developments; and the Company's ability to protect its trade secrets or other proprietary rights, operate without infringing upon the proprietary rights of others and prevent others from infringing on the Company's proprietary rights. A discussion of these and other factors with respect to the Company is set forth in the Company's Annual Report on Form 10-K for the year ended December 31, 2023, filed by the Company on April 1, 2024, and subsequent reports that the Company files with the Securities and Exchange Commission. Forward-looking statements speak only as of the date they are made, and the Company disclaims any intention or obligation to revise any forward-looking statements, whether as a result of new information, future events or otherwise.

View source version on businesswire.com:
https://www.businesswire.com/news/home/20250225405912/en/

**Investor Contact:**
Robert Schatz
(646) 421-9523
rschatz@tnfpharma.com
www.tnfpharma.com

Source: TNF Pharmaceuticals, Inc.