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Data Showing MyMD Pharmaceuticals' MYMD-1® May Extend Life and Improve Health Published in the Journal of Gerontology: Biological Sciences

Study of oral TNF-α inhibitor MYMD-1 demonstrates significant improvements in lifespan and maintenance of health characteristics compared to rapamycin

BALTIMORE--(BUSINESS WIRE)-- MyMD Pharmaceuticals, Inc.® (Nasdaq: MYMD) ("MyMD" or "the Company"), a clinical stage pharmaceutical company committed to developing novel therapies for age-related diseases, autoimmune and inflammatory conditions, announced today the publication of data in the *Journal of Gerontology: Biological Sciences* (JGBS) from a pre-clinical study of MYMD-1® demonstrating four-fold greater improvements than rapamycin in delaying aging and extending the life of mice who began treatment at the human equivalent of 60 years of age. The study was led by principal study investigator Patrizio P. Caturegli, MD, MPH, a professor of pathology at the Johns Hopkins University School of Medicine.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20220803005056/en/

"We are very excited that this important early data with our lead product MYMD-1 has been published in a prestigious medical journal," said Chris Chapman, MD, President, Director, and CMO of MyMD Pharmaceuticals. "These results further validate the potential of MYMD-1 in delaying aging. Our ongoing Phase 2 study of MYMD-1 in sarcopenia/frailty, a result of a pathological aging process, is going well. Since TNF-alpha is a key player in the aging process, we also believe MYMD-1 has real potential to address autoimmune and inflammatory conditions by modulating inflammation, even when begun at an advanced age."

MYMD-1, an oral selective inhibitor of tumor necrosis factor-alpha (TNF-α), that drives chronic inflammation, is being studied to slow the aging process, prevent sarcopenia and frailty, and extend healthy lifespan. A Phase 2 multi-center double-blind, placebo controlled, randomized study (NCT05283486) to investigate the efficacy, tolerability and pharmacokinetics of MYMD-1 in the treatment of chronic inflammation associated with sarcopenia/frailty is currently ongoing. The company's scientific advisory board met recently and agreed to move to the next higher dose in the study.

Aging is closely linked to multi-morbidities, frailty, and death due to conditions such as neoplastic, cardiovascular, neurodegenerative, metabolic, or autoimmune diseases.[i] Similarly, frailty, or a decline in physical function leading to greater risk of hospitalization, disability, and death, increases with age independent of underlying conditions or demographical characteristics.[ii]

Results from the JGBS Study

The study compared MYMD-1, an oral inhibitor of TNF-α, to rapamycin, the best characterized drug endowed with anti-aging properties. *In vivo*, a longitudinal cohort of C57BL/6 mice, was randomized to receive either MYMD-1, high-dose rapamycin, or low-dose rapamycin plus metformin. Each of these three treatment arms of 18 mice (10 females and 8 males) was followed for 13 months or until death. Lifespan was significantly longer in the MYMD-1 group compared to rapamycin (P=0.019 versus high-dose and P=0.01 versus low-dose) in a Cox survival model that accounted for sex and serum levels of IL-6, TNF-α, and IL-17A (see figure above). MyMD-1 also improved several health span characteristics in the study, resulting in milder body weight loss, maintenance of greater muscle strength, and amelioration of progression to frailty.

Additionally, using a panel of 12 human primary cell systems (BioMAP Diversity PLUSTM) where a total of 148 biomarkers were measured, MYMD-1 possessed anti-proliferative, anti-inflammatory, and anti-fibrotic properties. Many were shared with rapamycin, but MYMD-1 was more active in the inhibition of pro-inflammatory cytokines and pro-fibrotic biomarkers.

About MYMD-1

MYMD-1, an oral selective inhibitor of tumor necrosis factor-alpha (TNF-α), a driver of chronic inflammation, is being studied to slow the aging process, prevent sarcopenia and frailty, and extend healthy lifespan. MYMD-1 has shown effectiveness in pre-clinical and clinical studies in regulating the immune system. Unlike other therapies, MYMD-1 has been shown in these studies to selectively block TNF-α when it becomes overactivated in autoimmune diseases and cytokine storms, but not block it from doing its normal job of being a first responder to any routine type of moderate infection.

MYMD-1's ease of oral dosing is another differentiator compared to currently available TNF-α blockers, all of which require delivery by injection or infusion. No approved TNF inhibitor has ever been dosed orally. In addition, the drug is not immunosuppressive and has not been shown to cause the serious side effects common with traditional therapies that treat inflammation. Because it can cross the blood-brain barrier and gain access to the central nervous system (CNS), MYMD-1 is also positioned to be a possible treatment for brain-related disorders. Its mechanism of action and efficacy in diseases including multiple sclerosis (MS) and thyroiditis have been studied through collaborations with several academic institutions.

About MyMD Pharmaceuticals, Inc.

MyMD Pharmaceuticals, Inc. (Nasdaq: MYMD), a clinical stage pharmaceutical company committed to developing novel therapies for autoimmune and inflammatory conditions, is focused on developing two novel therapeutic platforms that treat the causes of disease rather than only addressing the symptoms. MYMD-1 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. MYMD-1 is being developed to delay aging, increase longevity, and treat autoimmune diseases. 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.mymd.com.

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 none of MyMD 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. Important factors that could cause actual results to differ materially from those indicated by such forward-looking statements include, without limitation: the timing of, and MyMD's ability to, obtain and maintain regulatory approvals for clinical trials of MyMD's pharmaceutical candidates; the timing and results of MyMD's planned clinical trials for its pharmaceutical candidates; the amount of funds MyMD requires for its pharmaceutical candidates; increased levels of competition; changes in political, economic or regulatory conditions generally and in the markets in which MyMD operates; MyMD's ability to retain and attract senior management and other key employees; MyMD's ability to quickly and effectively respond to new technological developments; MyMD'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 MyMD's proprietary rights; and the impact of the ongoing COVID-19 pandemic on MyMD's results of operations, business plan and the global economy. A discussion of these and other factors with respect to MyMD is set forth in the Company's Annual Report on Form 10-K for the year ended December 31, 2021, filed by MyMD on March 31, 2022. Forward-looking statements speak only as of the date they are made and MyMD disclaims any intention or obligation to revise any forward-looking statements, whether as a result of new information, future events or otherwise.

[i] St Sauver JL, Boyd CM, Grossardt BR, Bobo WV, Finney Rutten LJ, Roger VL, *et al.* Risk of developing multimorbidity across all ages in an historical cohort study: differences by sex and ethnicity. BMJ Open. 2015;**5**:e006413.

[ii] Kochanek KD, Murphy SL, Xu J, Arias E. Deaths: Final Data for 2017. Natl Vital Stat Rep. 2019;**68**:1-77.

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Investor:
Robert Schatz
(646) 421-9523
rschatz@mymd.com

Media:
Mike Beyer
Sam Brown, Inc.

(312) 961-2502
MikeBeyer@sambrown.com

Source: MyMD Pharmaceuticals, Inc.