



## MannKind Extends Collaboration With Thirona Bio on Fibrotic Lung Diseases

January 5, 2022

- MannKind purchased an additional convertible note issued by Thirona Bio
- Nonclinical PD study of MNKD-501 planned, with results anticipated in 2Q 2022
- MannKind's CEO appointed as a member of the Thirona board of directors

DANBURY, Conn., Jan. 05, 2022 (GLOBE NEWSWIRE) -- **MannKind Corporation (Nasdaq: MNKD)**, a company focused on the development and commercialization of inhaled therapeutic products for patients with endocrine and orphan lung diseases, announced that has extended its collaboration with Thirona Bio, Inc. ("Thirona") with the purchase of a second convertible note issued by Thirona, and the appointment of Michael Castagna, PharmD as a member of the Thirona board of directors.

Under the terms of the collaboration, which began in June 2021, the companies are evaluating the therapeutic potential of Thirona's locally acting TGF- $\beta$  inhibitor, FBM5712, for the treatment of pulmonary fibrosis. MannKind is developing MNKD-501, a dry powder inhaled formulation of FBM5712, which is advancing to a nonclinical pharmacodynamics (PD) study with key results anticipated in 2Q 2022. If initial studies are promising, MannKind can exercise certain rights to seek a full license to the compound for clinical development and commercialization for the treatment of fibrotic pulmonary diseases.

FBM5712 is a novel small molecule inhibitor of ALK-5 kinase (the transforming growth factor- $\beta$  (TGF- $\beta$ ) receptor kinase), which is also being developed by Thirona as a topical product intended to prevent and/or reduce skin fibrosis.

"Our preliminary prototype powders utilized in a pharmacokinetic study in rats produced concentrations in the lungs that appear to persist long enough to suggest that the drug could perform as hoped," said Thomas Hofmann, M.D., Ph.D., Chief Scientific Officer of MannKind Corporation. "These early positive signals warrant further evaluation and if successful, will trigger IND-enabling toxicology work for the compound."

Dr. Gordon Foulkes, Thirona Bio's Founder and Chief Executive Officer, added, "We are pleased to progress our collaboration with further investment and guidance from the team at MannKind. We're thrilled with the momentum since last summer and look forward to advancing a promising new formulation of FBM5712 for fibrotic lung diseases."

### About MannKind Corporation

MannKind Corporation (Nasdaq: MNKD) focuses on the development and commercialization of inhaled therapeutic products for patients with endocrine and orphan lung diseases. MannKind is currently commercializing Afrezza<sup>®</sup> (insulin human) Inhalation Powder, the Company's first FDA-approved product and the only inhaled ultra rapid-acting mealtime insulin in the United States, where it is available by prescription from pharmacies nationwide. Afrezza is also available by prescription in Brazil, where it is commercialized by the Company's partner, Biomm SA. MannKind was established in 1991, and is located in Danbury, Conn., and Westlake Village, Calif. The Company also employs field sales and medical representatives across the U.S. Please visit [mannkindcorp.com](http://mannkindcorp.com) to learn more.

### About Thirona Bio

Thirona Bio is focused on the development of drugs for fibrotic diseases. Target indications include scleroderma, keloid scars and certain cancers where there are no effective therapies. The company's unique approach uses a potent, topically applied drug to inhibit TGF- $\beta$  "locally", thereby minimizing the potential risk of systemic toxicity. The company is headquartered in San Diego, California. More information can be found at [www.thironabio.com](http://www.thironabio.com).

### Forward-looking Statements

This press release contains forward-looking statements that involve risks and uncertainties. Words such as "believes," "anticipates," "plans," "expects," "intends," "will," "goal," "potential" and similar expressions are intended to identify forward-looking statements. These forward-looking statements are based upon MannKind's current expectations. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of these risks and uncertainties, which include, without limitation, the risks that MannKind may not obtain a satisfactory return (or any return) on its investment in Thirona and that testing a product candidate may not yield successful results or results that are consistent with earlier testing. For a discussion of additional factors, please refer to MannKind's annual report on Form 10-K for the year ended December 31, 2020 as well as MannKind's other filings with the SEC. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this press release. All forward-looking statements are qualified in their entirety by this cautionary statement, and MannKind undertakes no obligation to revise or update any forward-looking statements to reflect events or circumstances after the date of this press release.

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