

February 23, 2017



# **Corbus Pharmaceuticals Announces Preclinical Data Demonstrating JBT-101 Reduces Inflammation in Alveolar Macrophages from Cystic Fibrosis Patients**

**Alveolar Macrophages treated with JBT-101 demonstrated reduced levels of key pro-inflammatory cytokines, TNF- alpha and IL-6**

NORWOOD, MA -- (Marketwired) -- 02/23/17 -- [Corbus Pharmaceuticals Holdings, Inc.](#) (NASDAQ: CRBP) ("Corbus" or the "Company"), a clinical stage drug development company targeting rare, chronic, serious inflammatory and fibrotic diseases, announced today that [Michael Knowles, M.D.](#), a member of the Company's Scientific Advisory Board and Professor of Pulmonary and Critical Care Medicine, University of North Carolina Chapel Hill will present findings demonstrating positive effects of JBT-101 on reducing inflammatory mediators in alveolar macrophages isolated from excised lungs of cystic fibrosis (CF) patients. The presentation will be on March 13, 2017, in New York City, at the Research and Development Day hosted by Corbus.

Normally, alveolar macrophages play an important role in lung host defense, secreting inflammatory mediators in healthy subjects in response to microbial infection. However, such macrophages from CF patients exhibit an exaggerated and persistent state of hyper-inflammation that has long-term consequences of irreversible damage to the lung and contributes to the serious morbidity and decreased life-span associated with CF.

Dr. Knowles will present experimental preclinical data from human alveolar macrophages treated with JBT-101 that have been isolated from excised lungs of individuals with CF undergoing lung transplantation. To mimic infection, the patient's macrophages were stimulated ex-vivo with lipopolysaccharide derived from *P. aeruginosa*, which is a major bacterial pathogen in CF, and cultured with and without JBT-101. Macrophages treated with JBT-101 demonstrated a reduced production of two important pro-inflammatory cytokines (tumor necrosis factor alpha and interleukin-6) compared to stimulated macrophages untreated by JBT-101. These pro-inflammatory mediators have been previously shown to be abnormally over-expressed by CF alveolar macrophages at both basal and LPS-stimulated conditions compared to macrophages from healthy donors.

"These results are encouraging with respect to the potential of JBT-101 to modify

inflammation in the lungs of CF patients, which offers an entirely novel approach to treat all genotypes of this chronic life-shortening disease," said Dr. Knowles.

"This human model has allowed us to explore the impact of JBT-101 on immune function of primary cells derived from CF patients' lungs. The data demonstrate JBT-101's unique mechanism of action that could help address chronic lung inflammation in CF patients potentially without the immunosuppression risk associated with existing anti-inflammatory therapies that render them inappropriate for usage in this disease," stated [Mark A. Tepper PhD, President and Chief Scientific Officer](#) of Corbus. "We look forward to our upcoming Phase 2 clinical data of JBT-101 in CF patients for further insight into this potential benefit."

Interested parties may access a live video webcast and accompanying slide presentation on the [Events](#) page of the [Investors](#) section of the Company's website at [www.CorbusPharma.com](http://www.CorbusPharma.com). The webcast will be accessible for 90 days following the event.

### ***About Cystic Fibrosis***

Cystic Fibrosis ("CF") is a chronic, life-threatening, genetic disease caused by inheriting two dysfunctional CFTR genes that normally regulate salt and water movement across cells in the respiratory and digestive systems. CF affects approximately 30,000 patients in the U.S and 75,000 patients worldwide. People with CF have thick, sticky mucus that clogs their airways, with recurrent bacterial infections and chronic inflammation in their lungs. In the gastrointestinal tract, they also have mucus accumulation, bacterial overgrowth, and inflammation. The dysfunctional CFTR genes cause an exaggerated inflammatory response that compounds the damage from a coexisting infection in the lungs and gut. CF results in destruction of lung tissue, lung fibrosis, pancreatic insufficiency, CF-related diabetes, malabsorption, malnutrition, growth retardation, and liver disease, including cirrhosis. The harmful inflammation and accompanying fibrosis in CF damages multiple organs, impairs organ function, reduces health-related quality of life, and can lead to death.

### ***About JBT-101***

JBT-101 is a novel synthetic oral endocannabinoid-mimetic drug that preferentially binds to the cannabinoid receptor type 2 (CB2) expressed on activated immune cells and fibroblasts. CB2 activation triggers endogenous pathways that resolve inflammation and halt fibrosis. Preclinical and Phase 1 studies have shown JBT-101 to have a favorable safety, tolerability and pharmacokinetic profile. It has also demonstrated promising potency in preclinical models of inflammation and fibrosis. JBT-101 is designed to trigger the production of "Specialized Pro-resolving Lipid Mediators" that activate an endogenous cascade responsible for the resolution of inflammation and fibrosis, while reducing production of multiple inflammatory mediators. In effect, JBT-101 triggers endogenous pathways to turn "off" chronic inflammation and fibrotic processes, without causing immunosuppression.

### ***About Corbus***

Corbus Pharmaceuticals Holdings, Inc. is a clinical stage pharmaceutical company focused on the development and commercialization of novel therapeutics to treat rare, chronic, and serious inflammatory and fibrotic diseases. The Company's lead product candidate, JBT-101, is a novel synthetic oral endocannabinoid-mimetic drug designed to resolve chronic inflammation, and fibrotic processes. In November 2016, Corbus reported positive topline

data results from a Phase 2 study in diffuse cutaneous systemic sclerosis, showing clear signal of clinical benefit with JBT-101. The Company recently completed a Phase 2 study of JBT-101 for the treatment of cystic fibrosis with topline data expected to be announced before the end of the first quarter of 2017. Additionally, JBT-101 is being evaluated in a Phase 2, 12-month open label extension study in systemic sclerosis, a Phase 2 study in skin-predominant dermatomyositis, with a 12-month open label extension study in dermatomyositis and another Phase 2 study in systemic lupus erythematosus planned to commence in the first quarter of 2017.

For more information, please visit [www.CorbusPharma.com](http://www.CorbusPharma.com) and connect with the Company on [Twitter](#), [LinkedIn](#), [Google+](#) and [Facebook](#).

### ***Forward-Looking Statements***

This press release contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 and Private Securities Litigation Reform Act, as amended, including those relating to the Company's product development, clinical trials, clinical and regulatory timelines, market opportunity, competitive position, possible or assumed future results of operations, business strategies, potential growth opportunities and other statement that are predictive in nature. These forward-looking statements are based on current expectations, estimates, forecasts and projections about the industry and markets in which we operate and management's current beliefs and assumptions.

These statements may be identified by the use of forward-looking expressions, including, but not limited to, "expect," "anticipate," "intend," "plan," "believe," "estimate," "potential," "predict," "project," "should," "would" and similar expressions and the negatives of those terms. These statements relate to future events or our financial performance and involve known and unknown risks, uncertainties, and other factors which may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Such factors include those set forth in the Company's filings with the Securities and Exchange Commission. Prospective investors are cautioned not to place undue reliance on such forward-looking statements, which speak only as of the date of this press release. The Company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise.

Source: Corbus Pharmaceuticals Holdings, Inc.

#### **Investor Contact**

Jenene Thomas

Jenene Thomas Communications, LLC

Phone: +1 (908) 938-1475

Email: [jenene@jenenethomascommunications.com](mailto:jenene@jenenethomascommunications.com)

#### **Media Contact**

David Schull

Russo Partners, LLC

Phone: +1 (858) 717-2310

Email: [david.schull@russopartnersllc.com](mailto:david.schull@russopartnersllc.com)

Source: Corbus Pharmaceuticals Holdings, Inc.