TFF Pharmaceuticals Announces Multiple Presentations Highlighting Broad Applicability of its Thin Film Freezing Technology at Respiratory Drug Delivery Meeting (RDD)

May 2, 2022

Thin Film Freezing Technology Co-Inventor Dr. Robert O. Williams III to Deliver Platform Presentation of Data on Stabilizing and Delivering Antivirals, Antibodies and Vaccines using Thin Film Freezing Technology in the Fight Against COVID-19

Members of Dr. Williams’ Lab at The University of Texas at Austin will Present Five Posters at RDD Meeting

Research Showcases Versatility and Differentiation of the Thin Film Freezing Technology Platform and its Potential to Address Multiple Challenges in Drug Development of Biologics

Dr. Williams and Colleagues Also Published New Research Demonstrating Significant Advantages of Thin Film Freezing Over Conventional Dry Freezing

FORT WORTH, Texas, May 02, 2022 (GLOBE NEWSWIRE) -- TFF Pharmaceuticals, Inc. (NASDAQ: TFFP), a clinical-stage biopharmaceutical company focused on developing and commercializing innovative drug products based on its patented Thin Film Freezing (TFF) technology platform, today announced substantial new data to be presented on its technology platform at the Respiratory Drug Delivery (RDD) Meeting, which is taking place between May 1-5, 2022 in Orlando, Florida.

Robert O. (Bill) Williams III, Ph.D., co-inventor of Thin Film Freezing technology and special advisor to TFF Pharmaceuticals, will deliver a platform presentation with data on stabilizing and delivering antivirals, antibodies and vaccines using Thin Film Freezing technology in the fight against COVID-19 and other serious viral infections. Additionally, Dr. Williams and his colleagues will present five posters highlighting the broad applicability of Thin Film Freezing to improve drug development of biologics and small molecules for respiratory diseases, including pulmonary fibrosis and COVID-19. The findings from Dr. Williams’ lab also highlight how Thin Film Freezing can be used to facilitate delivery of other treatment modalities, such as gene therapy.

One of the five posters, which explores the use of machine learning algorithms (artificial intelligence) to analyze how Thin Film Freezing impacts aerosol delivery of dry powder therapies, will be recognized at the “Poster on the Podium” session to be held on Monday May 2, 3:30-4:55 p.m. ET.

“We are excited to share these data showcasing the incredible versatility of the Thin Film Freezing platform at the RDD conference,” said Glenn Mattes, CEO of TFF Pharmaceuticals. “As we continue to advance TFF’s broad array of pipeline programs leveraging Thin Film Freezing technology to improve therapeutic safety and efficacy, Dr. Williams and his colleagues are doing equally important work in parallel to validate the technology’s effectiveness and explore future applications.”

Additionally, TFF Pharmaceuticals announced the online publication of a scientific paper from researchers at the College of Pharmacy, The University of Texas at Austin, including Dr. Williams, which demonstrates the significant advantages of Thin Film Freezing technology over conventional freeze-drying techniques. The paper is titled “Accelerated mass transfer from frozen thin films during thin-film freeze-drying” and has been published on the preprint server bioRxiv, as well as submitted to a peer-reviewed journal for future publication.

Using *E. coli* as a model, whose viability in dry powders is highly sensitive to the water content, the research shows that the drying rate of Thin Film Freezing is significantly higher than that of conventional shelf freeze-drying. The research also notes that Thin Film Freezing can be applied to produce dry powders of *E. coli* and *L. acidophilus* with minimum bacterial viability loss, and that *L. acidophilus* dry powder is suitable for intranasal delivery.

Dr. Williams added, “Our lab continues to uncover new ways that Thin Film Freezing technology could revolutionize drug delivery and development by converting existing therapies and modalities, such as proteins and biologics, to dry powder formulations. This includes our latest research paper which highlights how biologics that undergo Thin Film Freezing can dry faster than conventional freeze-drying, as well as the findings to be presented at the RDD conference showing the broad applicability of the technology. I am looking forward to presenting at the conference this week and to sharing further updates from our ongoing research in the coming months.”

RDD 2022 Presentation Details

**Title:** Pivoting Research to Fight COVID-19: Stabilizing and Delivering Antivirals, Antibodies and Vaccines using Thin Film Freezing (Oral Platform Presentation)

- **Date/Time:** Monday, May 2, 11:00-11:30 a.m. ET
- **Session:** SESSION 1: Focus on Therapeutics: New Tools, Therapies & Technologies
- **Presenter:** Robert O. Williams III

**Title:** The Applications of Artificial Intelligence in Designing Dry Powder for Inhalation Using Thin-Film-Freezing Technology (Selected for “Poster on the Podium” Presentation)
About Respiratory Drug Delivery®

Respiratory Drug Delivery, RDD®, addresses emerging issues surrounding drug delivery to the lung and nose. Conferences held in the United States, Europe and Asia provide a venue for expert speakers to cover topics including: new therapeutic opportunities and drug delivery technologies, novel in vitro, in vivo and clinical testing methods, and regulatory science. Extensive networking opportunities in relaxed surroundings are a hallmark of RDD meetings, which attract opinion leaders and delegates from all over the world. Our signature Scientific Poster Session and Technology Exhibition allows formulation, device and equipment designers, component suppliers, CROs and specialized consulting firms to present their latest developments alongside scientific posters from the aerosol community.

ABOUT TFF PHARMACEUTICALS’ THIN FILM FREEZING TECHNOLOGY PLATFORM

TFF Pharmaceuticals’ Thin Film Freezing (TFF) platform was designed to improve the solubility and absorption of poorly water-soluble drugs and is particularly suited to generate dry powder particles with properties targeted for inhalation delivery, especially to the deep lung, an area of extreme interest in respiratory medicine. The TFF process results in a “Brittle Matrix Particle,” which possesses low bulk density, high surface area, and typically an amorphous morphology, allowing the particles to supersaturate when contacting the target site, such as lung tissue. Based upon laboratory experiments the aerodynamic properties of the particles are such that the portion of a drug deposited to the deep lung has the potential to reach as high as 75 percent.

About TFF Pharmaceuticals

TFF Pharmaceuticals, Inc. is a clinical-stage biopharmaceutical company engaging patented rapid freezing technology to develop and transform medicines into potent dry powder formulations for better efficacy, safety and stability. The company’s versatile Thin Film Freezing (TFF) technology platform has broad applicability to convert any drug, including vaccines, small and large molecules and biologics, into an elegant dry powder highly advantageous for inhalation, with improved absorption so drugs can also be delivered to the eyes, nose and topically to the skin. TFF has two lead drug candidates in the clinic: Voriconazole Inhalation Powder and Tacrolimus Inhalation Powder, and continues to expand its pipeline by collaborating with a broad array of pharmaceutical companies, academic institutions and government partners to revolutionize healthcare around the globe. The TFF Platform is protected by 120+ patents issued or pending in the U.S. and internationally. To learn more about TFF Pharmaceuticals and its product candidates, visit the Company’s website at https://tffpharma.com.

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This press release contains forward-looking statements regarding TFF Pharmaceuticals, Inc., including the advantages of the Company’s Thin Film Freezing technology over conventional freeze-drying techniques and expectations for its continued development of Inhaled Tacrolimus and Voriconazole Powders, the benefits of the Company’s TFF platform and the Company’s plans to add to its existing pipeline of product candidates. Those forward-looking statements involve known and unknown risks, uncertainties and other factors that could cause actual results to differ materially. Among those factors are: (i) the risk that the Company may not be able to successfully commercialize the perceived advantages of the Company’s Thin Film Freezing technology over conventional freeze-drying techniques, (ii) successfully conclude clinical testing or obtain pre-market approval of its Inhaled Tacrolimus or Voriconazole Powders or any of its dry powder product candidates, (iii) no drug product incorporating the TFF platform has
received FDA pre-market approval or otherwise been incorporated into a commercial drug product, (iv) the Company has no current agreements or understandings with any large pharmaceutical companies for the development of a drug product incorporating the TFF Platform, (v) the risk that the Company will not be able to conclude a long-term commercial agreement with any third-party, and (vi) those other risks disclosed in the section “Risk Factors” included in the Company’s 2021 Annual Report on Form 10-K filed with the SEC on March 24, 2022. TFF Pharmaceuticals cautions readers not to place undue reliance on any forward-looking statements. TFF Pharmaceuticals does not undertake, and specifically disclaims, any obligation to update or revise such statements to reflect new circumstances or unanticipated events as they occur, except as required by law.

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