MannKind Presents Novel Scientific Data at 13th International Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2020)

February 20, 2020

WESTLAKE VILLAGE, Calif., Feb. 20, 2020 (GLOBE NEWSWIRE) -- **MannKind Corporation (NASDAQ: MNKD)** today announced the presentation of results from multiple clinical studies of Afrezza® (insulin human) Inhalation Powder and MannKind's BluHale ® technology system. These data are being presented in both oral and poster presentations during the 13th International Conference on **Advanced Technologies & Treatments for Diabetes** (ATTD 2020) in Madrid Spain, February 20-22, 2020.

"We are very pleased to have the opportunity to highlight these positive results during this year's ATTD," stated Dr. David Kendall, Chief Medical Officer of MannKind. "These presentations highlight original studies of Afrezza in individuals with both type 1 and type 2 diabetes, and include initial studies of Afrezza in pediatric patients. In addition to the results of clinical studies, we are pleased to disclose novel data on the use of BluHale, our Bluetooth-enabled technology for real-time profiling of inhalation effort and other parameters associated with the use of our inhaler. Collectively, these data further expand our understanding of the unique clinical profile of Afrezza, and highlight the potential use of Afrezza in children and adolescents, as well as advancing the opportunity to create connected technology for our drug delivery system."

Highlights of the original scientific disclosures:

- Preliminary data from an independent, investigator initiated study of Afrezza on the background of closed loop pump insulin delivery by means of an "artificial pancreas" system showed that pulmonary dosing allows for titration to higher unit doses in individuals with type 1 diabetes (presented by Alfonso Galderisi MD, PhD from Yale University).
- Clinical use of Afrezza in adults with uncontrolled type 2 diabetes on two or more glucose lowering therapies resulted in a significant (1.6%) drop in A1c levels and a significant increase in time in range (presented by Dr. Philip Levin MD, Endocrinology, MODEL Clinical Research).
- Pharmacokinetics (and pharmacodynamics) of Technosphere insulin in children and adolescents ages 8-17 with type 1 diabetes showed that the ultra rapid rise in insulin concentrations corresponded with early post-prandial glucose control within the first hour post-dose, similar to what has been observed in adult patients.
- Two poster presentations highlighting the use of MannKind's unique Bluetooth enabled technology for enhanced instruction on use of the Afrezza inhaler and as a tool to provide connected dose information on top of continuous glucose monitoring data.

Dr. Phillip Levin, Principal Investigator from MODEL Clinical Research in Baltimore, MD and lead author on the study of uncontrolled type 2 diabetes patients, noted that "the addition and rapid titration of Afrezza in patients with type 2 diabetes not currently at goal using two or more glucose lowering therapies, resulted in a 1.6% reduction in A1C and significantly increased time in range as measured by CGM. Our study provides additional clarity on both dose requirements and the clinical impact of adding ultra rapid-acting Afrezza therapy in uncontrolled type 2 diabetes."

In addition to the original scientific disclosure presented at this year's ATTD meeting, Dr. Kendall will participate as faculty in the "Ultra-rapid Insulin Analogues" session on Saturday, February 22, during which he will provide a current perspective on the clinical use of Afrezza, including evidence that ultra rapid-acting Afrezza can be safely and effectively titrated in fixed dose increments and that speed of insulin action may supersede dose precision for achieving post-prandial glucose control.

The full title of each of the presentations, presenting author, and the date and time of each disclosure are provided below.

ORAL PRESENTATION HIGHLIGHTS

Title: Technosphere® Insulin Provides Better Early Postprandial Glucose Control Than Subcutaneous Rapid-Acting Analogue
(ATTD 2020 - Saturday February 22, 2020; 8:50 – 9:00 a.m. – Berlin Room)

Presenter: David Kendall, MD, MannKind Corporation

ELECTRONIC POSTER PRESENTATION HIGHLIGHTS

Title: Patient Trainer Experience with BluHale® V1.0 for Proper Technosphere® Insulin Administration
(ATTD 2020 – Thursday, February 20, 2020; 8 a.m.)

Presenter: Nadia Zaveri, PharmD, MannKind Corporation

Title: Safety and Pharmacokinetics of Technosphere® Insulin in Pediatric Patients
(ATTD 2020 – Thursday, February 20, 2020; 8 a.m.)

Presenter: David Kendall, MD, MannKind Corporation

Title: Insights to Improve Use of Technosphere® Insulin Provided By BluHale®, a Digital Diabetes Tool
(ATTD 2020 – Thursday, February 20, 2020; 8 a.m.)

Presenter: Benoit Adamo, MannKind Corporation

Title: Effective Treatment of Patients with Uncontrolled Type 2 Diabetes On Multiple Diabetes Medications By Adding Mealtime Ultra-rapid Technosphere® Insulin
(ATTD 2020 – Thursday, February 20, 2020; 8 a.m.)

Presenter: Philip Levin, MD, Endocrinology, MODEL Clinical Research

Title: Afrezza® Pre-meal Bolus Reduces Early Glycemic Excursion During Hybrid Closed Loop Treatment
(ATTD 2020 – Saturday, February 22, 2020; 8:30 a.m.)

Presenter: Alfonso Galderisi, MD, PhD, Yale University

About ATTD Annual Meeting
The ATTD is a scientific program that brings leading international experts together to discuss breakthroughs in diabetes treatments, technological innovations and showcase the latest developments in new insulin analogues, delivery systems, pumps, glucose sensors, closed-loop systems and much more.

About Afrezza®
Available by prescription, Afrezza® (insulin human) Inhalation Powder is an ultra rapid-acting inhaled insulin indicated to improve glycemic control in adult patients with diabetes mellitus. Afrezza consists of a dry powder formulation of human insulin delivered from a small and portable inhaler. Administered at the beginning of a meal, Afrezza dissolves rapidly upon inhalation to the lung and passes quickly into the bloodstream (in less than one minute). This rapid absorption allows Afrezza to begin reducing blood sugar levels within about 12 minutes of administration. Afrezza is available in 4-unit, 8-unit and 12-unit single-dose cartridges of insulin powder that can be used, as prescribed by a health care professional, in combination with other diabetes medications to achieve target blood sugar levels. For Afrezza doses exceeding 12 units, patients may use a combination of existing cartridge strengths. For more information on Afrezza, please visit www.afrezza.com.

About MannKind
MannKind Corporation (NASDAQ:MNKD) focuses on the development and commercialization of inhaled therapeutic products for patients with diseases such as diabetes and pulmonary arterial hypertension. MannKind is currently commercializing Afrezza® (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. MannKind is headquartered in Westlake Village, California, and has a state-of-the art manufacturing facility in Danbury, Connecticut. The Company also employs field sales and medical representatives across the U.S. For further information, visit www.mannkindcorp.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 various risks and uncertainties detailed in MannKind's filings with the SEC. For a discussion of these and other factors, please refer to MannKind's quarterly report on Form 10-Q for the quarter ended September 30, 2019 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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