

Afresa™ and the Technosphere® Technology

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Afresa™ (Technosphere® Insulin) is a novel super-rapid acting insulin. The cornerstone of Afresa™ is the Technosphere® technology which enables the pulmonary delivery of peptide and protein therapeutics that are currently administered by injection. Insulin administered as Afresa™ demonstrates a unique pharmacokinetic profile that mimics the body's natural response to a meal and clearly differentiates it from all other insulins, inhaled or injected. The onset of insulin action following Afresa™ inhalation occurs within minutes, C_{max} occurs at ~15 minutes, and the duration of insulin action is ~2 hours. These unique characteristics enable a new treatment paradigm that has the potential to provide glycemic control with lower risk of hypoglycemia, less weight gain, and improved postprandial glucose control. The utility of Technosphere® technology as a platform for protein and peptide delivery to the lung has been demonstrated with other drugs including GLP-1, PTH, and anti-obesity peptides. GLP-1 inhaled as a Technosphere® formulation is also characterized by a rapid absorption profile that mimics normal physiology and eliminates the commonly encountered unwanted side effects associated with injected GLP-1. Anti-obesity peptides administered as Technosphere® formulations provide greater reductions in food consumption than the same drugs administered by injection. Overall, the Technosphere® technology represents a versatile drug delivery platform that mimics the pharmacokinetic profile of intra-arterial injection and is characterized by very rapid systemic drug absorption into the arterial circulation.

This presentation will cover:

- The science behind Afresa™.
- The potential clinical advantages of Afresa™ over other insulins.
- The Technosphere® technology platform and products beyond insulin that may benefit from its characteristics.