DBRE-K1 for the Treatment of Type 2 Diabetes

Overview

Drug Name	DBRE-K1
Description	DBRE-K1, a recombinant form of human tissue kallikrein-1 (KLK1), is in preclinical development for the treatment of type 2 diabetes.
Target	Kallikrein-1
Drug Modality	Recombinant Proteins
Indication	Type 2 Diabetes
Product Category	Glucose Lowering Agents
Mechanism of Action	Signal Transduction Modulators
Status	Preclinical
Patent	Granted

Seeking Global Cooperation

Protheragen Inc. is actively seeking partnership for DBRE-K1. Potential collaboration can be strategic alliance, licensing, or marketing agreement.
We look forward to hearing from you.

Target

kallikrein-1 (KLK1)

Kallikreins are a subgroup of serine proteases having diverse physiological functions. Growing evidence suggests that many kallikreins are implicated in carcinogenesis and some have potential as novel cancer and other disease biomarkers. This gene is one of the fifteen kallikrein subfamily members located in a cluster on chromosome 19. This protein is functionally conserved in its capacity to release the vasoactive peptide, Lys-bradykinin, from low molecular weight kininogen.

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Indication

Type 2 Diabetes

Diabetes is a group of metabolic diseases classified by chronic hyperglycemia resulting from defects in insulin secretion, insulin action or both. It is classified into four major subtypes: type 1, type 2, gestational, and others.

An estimated 463 million adults worldwide were living with diabetes in 2019, according to the International Diabetes Federation. Moreover, this number continues to grow at an alarming rate. By 2030, this figure will be 578 million, and by 2045, it will be 700 million. In addition, the vast majority (>90%) of diabetes patients are classified as type 2, the pathogenesis of which is directly related to aging, unhealthy diet, obesity, and sedentary lifestyles.

A variety of chronic complications and comorbidities are associated with diabetes and poor glycemic control, and their prevalence increases with worsening glycemic status. The objective of diabetes therapy is to achieve the best possible glycemic control while avoiding hypoglycemia, thus reducing the long-term risk of complications. Current treatment guidelines emphasize three major components of treatment of the patient with type 2 diabetes: diet and exercise, normalization of blood glucose levels, and aggressive management of cardiovascular risk factors to prevent micro- and macrovascular complications.

Mechanism of Action

Signal Transduction Modulators

Molecular Mechanism	Glycogen Synthase Kinase 3 (GSK-3) Inhibitors Insulin Secretagogues Insulin Sensitizers

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Status

The Status of DBRE-K1

The international patent applications under the PCT have been granted.

	Discovery/Optimization	Preclinical	Clinical
DBRE-K1			

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