Novel Anti-hyperglycemic Drugs (Yissum)

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Novel pentose derivatives for treating hyperglycemia

Categories	Diabetes drugs, hyperglycemia
Patent Status	Patent granted in US and pending in EU
Development Stage	Proof of concept in animal models, acute toxicology performed
Market Size	Global diabetes drugs treatment market was valued at $15 billion in 2005

Highlights

Existing anti-hyperglycemic drugs that ameliorate insulin secretion and action have a relatively high rate of failure.

- There is an intensive worldwide effort to develop a new generation of anti-hyperglycemic drugs that mimic insulin action even in the total absence of insulin.
- This novel approach is based on the discovery that some pentoses and their derivatives augment glucose transport in skeletal muscle cells in a non-insulin-dependent manner.

Our Innovation

These potential antihyperglycemic drugs may reduce high blood glucose levels in Type-2 diabetic subjects by augmenting the rate of peripheral glucose disposal in insulin sensitive tissues (i.e., skeletal muscles).

Key Features

- Increases rate of cellular glucose transport and utilization
- Improves peripheral glucose disposal
- Treats daily glucose fluctuations
- Reduces dosage of anti-diabetic medication needed for diabetes treatment

Development Milestones

- Pharmacokinetic studies of the drug delivery system using larger number of volunteers
- Toxicology
- In vitro and in vivo evaluation of current and planned formulations of the prototype compounds

The Opportunity

- Diabetes affects over 180 million people worldwide and the market is growing at three times the rate of population growth. Poor control of blood sugar results in severe long-term complications such as kidney failure, nerve damage, blindness, amputation and cardiovascular disease.
- In recent years, there has been a change in the treatment of hyperglycemia in the United

States away from monotherapy with oral antihyperglycemic drugs toward combination therapies to improve glycemic control and reduce the risk of hypoglycemic symptoms in treated individuals.

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