

Protein Kinase B/AKT Modulators and Methods of Use Thereof

Inventors:

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Applications:

Diabetes, Drug Discovery

A protein, TRB3, found to be overexpressed in response to diabetes and fasting is an attractive drug target in the treatment of type II diabetes.

Under physiological conditions, binding of insulin to its receptor triggers the activation of a phospholipid-dependent kinase cascade that culminates in phosphorylation of the Ser-Thr kinase Akt also called PKB. The Akt family of kinases consists of three highly related family members: Akt1, Akt2 and Akt3. Among other essential pathways in glucose regulation, these critical kinases inhibit glycogenolysis, promote glycogen synthesis, and block gluconeogenic genes. These pathways are all involved in diabetes, and modulators of PKB/Akt kinases present novel methods of diagnosis and treatment. The invention describes modulators of PKB/Akt protein kinases that affect the phosphorylation state and activity of these enzymes. The modulators identified are TRB3 and related family members. TRB3 specifically inhibits Akt during fasting, and inappropriate expression of TRB3 in diabetes may contribute to insulin resistance by blocking Akt activity in the fed state. Thus TRB3 is an attractive drug target for the treatment of type II diabetes.

References:

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Exclusive and Non-Exclusive Licenses Negotiable

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