

Inhibition of 2C Cocksackie B virus protein to decrease pathogenicity of diabetes mellitus Type1

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Abstract

Insulin-dependent diabetes mellitus type 1 (T1D), also referred to as autoimmune diabetes. T1D is a chronic disease which is characterized by way of insulin deficiency. The deficiency is due to pancreatic β cell loss and leads to hyperglycemia. There are many factors which [play significant role in T1D disease pathogenicity including genetic predisposition, the immune system and environmental factors. A possible link of environmental factor with Diabetes Mellitus Type1 was first reported in 1969. T1D association with Cocksackie viruses B4 has been suspected more than forty years. In recent studies the presence of Cocksackie B4 virus has been confirmed by using PCR test of different diabetic patients. Cocksackie B4 viruses belong to the picornavirus family. These are small RNA viruses and are characterized by a single positive strand genomic RNA. There should be a drug for the T1D which is caused by Cocksackie B4 viral protein. The objective of current in silico study is to

identify active lead compounds against Cocksackie B4 virus that cause autoimmune destruction of pancreatic beta cells and cause T1D by using computational studies. Based on analysis two lead compounds ZINC00034488 and ZINC00034585 were selected as a potential drug. This work will help researchers to get an idea about the understanding of chemicals against Cocksackie B4 Viruses and helpful for researchers to design a drug and test these chemical as a drug to overcome Diabetes Mellitus Type1 which is caused by Environmental factors such as coxsackie B4 viruses.

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