Scientists identify role of a protein that causes obesity linked diabetes

This news can bring smiles on the faces of all those people who are suffering from obesity-induced diabetes. A group of researchers from Council of Scientific and Industrial Research- Center for Cellular and Molecular Biology (CSIR-CCMB) have shown the role of a protein that is responsible in increasing insulin action in obesity-induced diabetes.

The research work shows that the protein secretagogin (SCGN) binds to insulin and protects it from various stresses, increases its stability and adds to its action. “There is SCGN protein that is present in pancreases beta cells, this is the same place where insulin is secreted. This protein helps in insulin secretion. We have seen that wherever insulin is present this protein goes there along with it. We thought that if it works in secretion it must have some other role too. The blood levels are seen to have decreased SCGN protein level in diabetes generally” said Dr Yogendra Sharma, lead researcher from CSIR-CCMB while speaking with India Science Wire.

The experiments showed that if the SCGN protein alone was injected in rats plays no significant role in diabetes. But if this protein is injected with insulin, the effect of insulin increased and it also enhanced the efficacy of insulin. If SCGN protein is mixed with insulin it binds well with insulin it enhances the effect of it. With it also does not allow insulin to get precipitated. The SCGN protein works equally well in both in diabetes type I and type II.

There is a correlation between diabetes and neurodegenerative diseases as chances of Alzheimer and Parkinson’s diseases are higher in diabetic patients. The levels of SCGN protein decrease in Alzheimer and Parkinson’s diseases. SCGN protein doesn’t allow from precipitating the protein responsible for Alzheimer and Parkinson’s disease, which means it can save from neurodegeneration too.

Speaking on the implications of this finding,Dr Sharma said,“It is your own protein that has been given to you so chances of immune reactions are low. The therapeutic potential of this is very strong for both types of diabetes we have named it as secretagogin therapy. The data shown that if we keep giving this therapy the beta cells start regenerating.”

“While studying calcium-binding properties of SCGN, CCMB scientists have discovered a novel function of this protein in diabetes biology, yet another example of how quality basic science can lead to valuable applications” says Dr Rakesh Mishra, Director, CCMB.

Diabetes affects millions of people globally. It is a metabolic disorder with a defect in insulin production, secretion or action which consequently results in high blood glucose levels. Various kinds of cellular stresses can result in loss of structure and function of insulin, ultimately leading to diabetes.

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