

High Blood Sugar Levels Linked to Cancer Risk

Source: Food Product Design

Scientists at the University Rey Juan Carlos have identified a key molecular mechanism through which high blood glucose increases the activity of a gene widely implicated in cancer progression, according to a new study published in the journal *Molecular Cell*. The findings may lead to potential novel therapies aimed at reducing cancer risk in the obese and diabetic populations.

The researchers were investigating how cells in the intestine respond to sugars and signal to the pancreas to release insulin, the key hormone that controls blood sugar levels. Sugars in the intestine trigger cells to release a hormone called GIP that enhances insulin release by the pancreas. The team showed that the ability of the intestinal cells to secrete GIP is controlled by a protein called β -catenin, and that the activity of β -catenin is strictly dependent on sugar levels.

Increased activity of β -catenin is known to be a major factor in the development of many cancers and can make normal cells immortal, a key step in early stages of cancer progression. The study demonstrates that high (but not normal) sugar levels induce nuclear accumulation of β -catenin and leads to cell proliferation. The changes induced on β -catenin, the molecules involved and the diversity of cancer cells susceptible to these changes are identified.

"We were surprised to realize that changes in our metabolism caused by dietary sugar impact on our cancer risk. We are now investigating what other dietary components may influence our cancer risk. Changing diet is one of easiest prevention strategies that can potentially save a lot of suffering and money," the researchers said.