

Researchers find changes to protein SirT1

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Researchers find changes to protein SirT1 can prevent excess metabolic stress associated with obesity, diabetes and aging.

Studies have suggested that the protein SirT1 may be protective in [metabolic diseases](#) and the effects of aging, and diminished SirT1 activity has been reported in various disease models including [diabetes](#) and [metabolic syndrome](#). Maintaining a normal level of this protein may be effective in preventing obesity- and age-related diseases.

Metabolic stress caused by obesity, diabetes and aging increases a small molecule, glutathione that reacts with SirT1, inhibiting its activity. In a recent paper published online in the *Journal of Biological Chemistry*, Boston University School of Medicine (BUSM) researchers have demonstrated that by changing three of the amino acids on SirT1 they could produce a "super-sirt" which functioned normally despite the metabolic stress.

"In the process of preventing the effects of the stress occasioned by metabolic excess typical of obesity, diabetes and aging, the enzyme function of SirT1 can be destroyed by the very [metabolic stress](#) it is trying to overcome," says Richard Cohen, MD, professor of medicine and director of the section of vascular biology at BUSM. "This study establishes that stresses associated with excess metabolism can be circumvented by changing the protein, or by preventing the glutathione reaction with the protein."

Provided by Boston University Medical Center

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