Human Perilipin Proteins

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Technology description

Summary

Perilipins are important regulators of lipid storage in fat cells. These proteins stabilize fat droplets and control their breakdown by controlling access of lipid-degrading enzymes. Since these proteins are central to the storage and breakdown of body fat it very likely that they are crucial for the regulation of body weight. Perilipin expression is elevated in obese animals and humans. Mutations in the perilipin gene are associated with increased risk of obesity in women. Importantly, when the perilipin gene is inactivated the obesity of model mice is reversed. Therefore, perilipin could be a good candidate for therapeutic targeting to treat obesity in humans.

This NIH invention claims DNA sequences of splice variants that code for human perilipin protein isoforms and methods of expressing the recombinant protein in bacteria or mammalian cells. It also claims substantially purified perilipin proteins and methods for detecting their presence in a biological sample.

Application area

Drug development for obesity
Diagnostics for detection of perilipins
Antigens for antibody production
Markers for identifying true adipocytes

Advantages

Cloned DNA sequences ready for protein expression
Isoforms allow greater flexibility in designing therapeutics

Institution

NIH - National Institutes of Health

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