Isolation of a Gene Encoding Diacylglycerol Acyltransferase

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Technology description

This technology provides the sequence that encodes a human diacylglycerol acyltransferase (DGAT), and method to purify the DGAT polypeptide, which is useful for treating triglyceride imbalance due to a defect in esterification of diglycerol.

Problem or Unmet Need:

Triglycerides are fatty acids with wide ranging functions in the body, from energy storage to cellular structure. Triglycerides play a key role in obesity, diabetes and arteriosclerosis; lowering levels of these lipids in blood plasma could benefit the lives of millions. Recent CDC studies indicate over 11% of the US population is affected by some form of heart disease, 32% of adults are obese and over 9% have some form of diabetes. In addition, certain hereditary disorders result in excessive triglyceride levels, a serious health problem leading to panceratitis. Cholesterol lowering drugs that also reduce triglycerides have demonstrated decreased coronary events in both the primary and secondary coronary prevention populations. Diacylglycerol acyltransferase (DGAT) synthesizes the linkage between sn-1,2-diacylglycerol and fatty acyl Coenzyme-A to form a triglyceride molecule. Therapies targeting DGAT levels could be developed for treating hypertriglyceridemia, hyperlipidemia, atherosclerosis, heart disease, obesity or other diseases associated with high or excessive levels of triglyceride.

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Application area

Therapy for hypertriglyceridemia, hyperlipidemia, atherosclerosis, heart disease, obesity or other diseases associated with high or excessive levels of triglyceride

Technology for generating new cloning and expression vectors, transformed and transfected prokaryotic and eukaryotic host cells, and new and useful methods for cultured growth of such host cells capable of expression of the DGAT polypeptide

Advantages

Supplementary therapy to current cholesterol lowering medications (fibrates, niacin and statins)
Significant potential in weight control market, unique method to reduce adipose deposition

Institution

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