

CHOLESTERYL ESTER TRANSFER PROTEIN (CETP) REDUCES ADIPOSE TISSUE MASS AND MODIFY GENE EXPRESSION IN TRANSGENIC MICE.

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CETP promotes triglyceride (TG) transfer from apolipoprotein B containing lipoproteins (LP) to HDL in exchange for cholesteryl ester. To investigate whether this CETP mediated TG redistribution between LP could have an effect on adiposity, we compared 5 month old CETP expressing transgenic (Tg) with wild type control mice fed a low fat chow diet. Mice body weight and relative mass of visible adipose depots were determined by gravimetry, adipocyte area by light microscopy, plasma leptin by ELISA and adipose tissue mRNA by RT-PCR. We found reduced body weight, perigonadal (77%) and subcutaneous (82%) fat depots, adipocyte area (46%) and fasting and fed plasma leptin levels in CETP Tg as compared to control mice. mRNA analysis of genes related to lipid metabolism in perigonadal adipose tissue revealed significant reductions in the expression of sterol regulatory element binding protein-2 (SREBP2, 40%) and lipoprotein lipase (39%) expression. In subcutaneous adipose depot, we found a decrease of PPAR γ (27%) and a markedly elevation of hormone sensitive lipase (5,6 fold) mRNA levels. In conclusion, CETP induces differential lipolytic and lipogenic gene expression resulting in reduction of body fat content and adipocyte size. These findings uncover a novel anti-adipogenic role for CETP.

Key words: CETP, adipose tissue, gene expression.

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