

Resveratrol Induces Lipoprotein Lipase Expression in CHO-K1 Cells

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Lipoprotein lipase (LPL) plays an important role in the metabolism of plasma lipid. It catalyzes the hydrolysis of triglycerides from very low-density lipoprotein and chylomicrons into glycerol, diacylglycerol and free fatty acid. Defects of LPL could cause type I hyperlipoproteinemia, and are also related to many diseases including obesity, coronary heart disease, pancreatitis and atherosclerosis. Resveratrol increased peroxisome proliferator activated receptor γ coactivator 1 α (PGC-1 α) activity, resulting in increased expression of respective genes, e.g., *LPL*. The aim of this study is to investigate the effects of resveratrol on the expression of *LPL*. An 8502-bp of plasmid containing the promoter region and entire coding sequence of human *LPL* was constructed and transfected into CHO-K1 cells. Transfected CHO-K1 cells treated with resveratrol resulted in about 2-fold increases of the LPL activity in media, and 2.5-fold increases of the LPL activity in cells. The results indicated that resveratrol could enhance the expression of the *LPL* through activating the PGC-1 α which plays an important role in the regulation of *LPL* expression.