

## **THE EFFECTS OF A COMBINATION OF N-3 PUFA AND SILYMARIN IN AN ANIMAL MODEL OF CARDIOVASCULAR DISORDERS**

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Elevated triglyceride and glucose level is associated with an increased risk of cardiovascular disorders. Nutraceuticals or natural drugs are usually safe and effective. In this study, we determined the effects of n-3 PUFA alone or n-3 PUFA in combination with silymarin.

For the study, the unique non-obese hereditary hypertriglyceridemic (HHTg) rats were chosen. Adult male rats were treated with n-3 PUFA (300 mg/kg/day) without or with 1% micronized silymarin in a diet for 4 weeks. Animals were sacrificed in the postprandial state thereafter samples were collected for the subsequent analysis.

A diet containing n-3 PUFA and silymarin significantly reduced the serum level of triglycerides by 45%, total cholesterol by 18%, non-esterified fatty acids by 33% and ectopic lipid accumulation in the skeletal muscle by 35%. Additionally, an increase in *Abcg5* and *Abcg8* mRNA expression (as genes affecting lipid homeostasis) as well as in protein content of ABCG5 (by 78%) and ABCG8 (by 232%) transporters have been determined in the liver of treated rats.

Our findings suggest that this combined diet could be used in the prevention of hypertriglyceridemia-induced metabolic disorders. Moreover, the combination was well-tolerated without evident unwanted effects.

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