

LIPOTROPIC ACTION OF GRAPE SEEDS POLYPHENOL COMPLEX

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Currently, the most significant metabolic liver disease is fatty liver (or steatosis). This basic metabolic underlying hepatic steatosis is insulin resistance, which leads to slower processes of lipolysis and exogenous deposition of fats and carbohydrates. Lipotropic factors are important factors that contribute to the normalization of lipids and cholesterol metabolism in the body, leading to a decrease in the degree of fatty infiltration of the liver. One of the representatives of substances that exhibit lipotropic action are plant polyphenols. A rich source of polyphenols is *Vitis vinifera*. Grape seeds are waste products of the winery and grape juice industry. These seeds contain lipid, protein, carbohydrates, and 5-8% polyphenols depending on the variety. Polyphenols in grape seeds are mainly flavonoids, including gallic acid, the monomeric flavan-3-ols catechin, epicatechin, gallocatechin, epigallocatechin, and epicatechin 3-O-gallate, and procyanidin dimers, trimers, and more highly polymerized procyanidins. The purpose of this research was to study white lipotropic action of complex polyphenolic compounds extracted from grape seeds.

The study was conducted on models of rats weighing 150-200 g, are kept in a vivarium of National University of Pharmacy. During the experiment, rats were divided into five groups. Animals from 2nd and 3rd group were kept on the high carbohydrate content diet. Animals 4th and 5th group were kept on the high fat content diet. Rats from 3rd and 5th groups received grape seeds polyphenols complex in doses 9 mg/100 g weight (in terms of polyphenols) within 21 days. After the experiment, the animals were decapitated under chlorasole-urethane anesthesia. Triacylglycerols (TG), phospholipids (PL), cholesterol (LDL) levels were defined in the liver and in the blood serum.

We have found that in rats were kept on high carbohydrate diet and high fat diet, triglycerides and cholesterol levels were increased in the liver and serum. A significant decrease of PL level was shown in the liver tissue. These data indicate about a reduction in the functional state of the liver. Grape seeds polyphenol extract supplementation reduced serum levels of TG and TG level in liver. This fact was accompanied by increasing of PL levels in serum and liver.

The findings suggested that the grape seeds polyphenols have strong pronounced lipotropic effect and may be beneficial in preventing of nonalcoholic steatohepatitis progression.