

## STUDY OF ANTIOXIDANT POLYPHENOLS GRAPES

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The most important metabolic liver disease is nonalcoholic steatosis and nonalcoholic steatohepatitis. A leading role in the accumulation of lipids in hepatocytes and in the pathogenesis this disease is the process of generation of free radical oxidation and reactive oxygen species. Generation of reactive oxygen species leads to stimulation of lipid peroxidation and so that to the development of necrosis of liver cells. At the same time there is change in the metabolism of plasma lipids and lipoproteins. A lot of hepatoprotective substances are used for the treatment of fatty liver. A group of natural (plant and animal) and synthetic preparations which increase resistance of hepatocytes to pathological effects, rendering harmless enhance the function of hepatocytes, contribute to the restoration of disturbed functions of liver cells. A wide range of pharmacological effects demonstrated plant polyphenols. A source of plant polyphenols is *Vitis vinifera*. A wide range of properties, for example antioxidant, immunomodulating, antiinflammatory activities, were shown for grape polyphenols. The purpose of this research is the study of antioxidant action of grape seeds polyphenol complexes.

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 2<sup>nd</sup> and 3<sup>rd</sup> group were kept on the high carbohydrate content diet. Animals 4<sup>th</sup> and 5<sup>th</sup> group were kept on the high fat content diet. Rats from 3<sup>rd</sup> and 5<sup>th</sup> groups received in doses 9 mg/100 g weight (in terms of polyphenols) within 21 days. Levels of lipid peroxidation products as malondialdehyde (MDA) and antioxidant vitamins as vitamin E and vitamin C were estimated in the liver and serum of experimental rats.

It was found that lipid peroxidation is higher and plasma antioxidant vitamins like vitamin E and vitamin C were lower in serum of rats were kept on a high carbohydrates and high lipids diet. Grape seeds polyphenols complex introduction decreased MDA level in rat serum and liver and increased endogenous antioxidant level in blood and liver of experimental rats.

The findings suggest that the grape seed polyphenols complex introduction exert a beneficial effect by inhibition of lipid peroxidation in rat serum and liver.