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Triacylglycerols, lipoproteins and cholesterol in human blood

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The simplest lipids constructed from fatty acids are the triacylglycerols, also referred to as triglycerides, fats, or neutral fats. Most natural fats, such as those in vegetable oils, dairy products, and animal fat, are complex mixtures of simple and mixed triacylglycerols. Cholesterol is doubtless the most publicized lipid, notorious because of the strong correlation between high levels of cholesterol in the blood and the incidence of human cardiovascular diseases. Various combinations of lipid and protein produce particles of different densities, ranging from chylomicrons and very lowdensity lipoproteins (VLDL) to very-high-density lipoproteins (VHDL).

The aim of this study was to determine values of total lipids (triacylglycerols, cholesterol, lipoproteins) in human blood obtained from patients from municipality Kichevo, Republic of Macedonia. The biochemical analyses were done in P.Z.U. Era-Medika“Kichevo for 52 patients with different gender and age.

Spectrophotometric method combined with activity of enzymes: lipoproteinlipase, peroxidase, and glycerol kinase was used for determination of triacylglycerols in human blood. The analysis of cholesterol was performed using enzyme colorimetric test with Lipid Clearing Factor, and the analysis of HDL-High Density Lipoprotein and LDL-Low Density Lipoprotein was done using Cholesterol liquicolor test kit, both followed by measuring of absorbance at 500 nm. Unregulated cholesterol production can lead to serious human disease. When the sum of cholesterol synthesized and cholesterol obtained in the diet exceeds the amount required for the synthesis of membranes, bile salts, and steroids, pathological

Accumulations of cholesterol in blood vessels (atherosclerotic plaques) can develop, resulting in obstruction of blood vessels (atherosclerosis). Atherosclerosis is linked to high levels of cholesterol in the blood, and particularly to high levels of LDL-bound cholesterol; there is a negative correlation between HDL levels and arterial disease. To have well healthy it is very important to reduce the level of LDL. This can be done by less consumption of food rich with cholesterol and saturated fatty acids such as eggs, meat products, cheese, butter, ham, full fat milk, coconut and palm oil.

Biography

Valentina Pavlova, Ph.D. degree in Chemistry has obtained at “Ss. Cyril and Methodius” University, Faculty of Natural Sciences and University Congress Center May 29-30, 2015, Ohrid, Macedonia 31 Mathematics, Institute of Chemistry, Skopje, Republic of Macedonia (RM) where she worked in a period of 2002-2009 as Teacher and Research Assistant. She is a Reviewer of four international journals: Food and Public Health, American Journal of Biochemistry, Resources and Environment, International Journal of Food Science and Nutrition Engineering.

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