

P001 Comparison of the effects of dietary saturated, monounsaturated, and polyunsaturated fatty acids on very low density lipoprotein secretion when delivered to hepatocytes in chylomicron remnant-like particles

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The effect of chylomicron remnants-like particles (CRLPs) enriched in saturated (SFA), monounsaturated (MUFA) or n-6 polyunsaturated fatty acids (PUFA) (derived from palm, olive and corn oil, respectively) on the secretion of very-low-density lipoprotein (VLDL) by rat hepatocytes in culture was investigated. CRLPs were incubated with cultured hepatocytes for 5h. The medium was then removed and the secretion of cholesterol and triacylglycerol into the whole medium or the $d < 1.050$ g/ml fraction during the following 16h was determined. After exposure of the cells to olive-oil as compared to corn and palm-oil CRLPs, secretion of triacylglycerol into the whole medium and into the $d < 1.050$ g/ml fraction was decreased. In addition, secretion of total cholesterol into the whole medium was decreased in hepatocytes treated with olive-oil as compared to corn-oil CRLPs. The triacylglycerol content of the cells was also lower in experiments with olive-oil as compared to corn-oil CRLPs. The levels of apoB48 found in the medium remained unchanged after the exposure of the cells to the different types of remnants. These findings indicate that the type of fat in the diet directly affects VLDL lipid secretion on delivery to the liver in chylomicron remnants.