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MECHANISM OF LOWERING OF THE BLOOD CHOLESTEROL LEVEL IN HYPERCHOLESTEROLEMIC RAT BY UL-COMPOUNDS, SN20 AND SQ

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This study was undertaken to explore the effect of SN20 and SQ compounds, which were synthesized by UL-Biotech on the lowering of level of the blood cholesterol by (Seoul, Republic of Korea), and the mechanism of them.

The lowering effect of SN20 and SQ on total blood cholesterol were determined in rats fed hyperlipidic powder diets containing 1% cholesterol and 0.5% cholic acid with various concentrations of SN20 or SQ for 1 week to 4 weeks. SN20 and SQ treated rats significantly decreased the total blood cholesterol level and HDL/LDL ratio from 1 week treatment in a dose-dependent manner. The levels of the total blood cholesterol by SN20 was lowered about 45% at 3 weeks treatment and continued to 4 weeks during treatment. Rats treated with SQ was more significantly decreased the total blood cholesterol level and HDL/LDL ratio even in a low doses compared to rats treated with SN20. To study the mechanism of lowering of the total blood cholesterol level by SN20 or SQ, we observed the inhibition of activity of the HMG-CoA reductase, which catalyzes the rate-determining reaction in cholesterol biosynthesis, using rat liver microsomes. The IC_{50} value of SQ was 879 nM which was higher than that of lovastatin (62.5 nM) but lower than that of SN20 (24.5 μ M). This result implicated that SN20 and SQ is lowered the total blood cholesterol levels by inhibiting the HMG-CoA reductase and SQ is a stronger hypolipidemic agent than SN20.