Structural Properties of Lipoproteins Isolated from Human Primary Hepatocyte Cultures

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Human primary hepatocytes were cultured in Williams E-10% fetal bovine serum supplemented with dexamethasone and insulin for 2 days prior to switching to serum-free medium. The % distribution of ^{35}S-methionine in VLDL, LDL, and HDL was 68±9%, 14±9%, and 19±5%, respectively. By dot blot analysis, apoB was the major VLDL protein but apos E and CII were also present. LDL possessed mainly apoB with some apoE. HDL contained apos AI, AII and E. Electron microscopy revealed heterogeneous, spherical VLDL, 42.7±9.8 nm diam. LDL morphology was variable; in one case particles were small (19.7±3.5 nm) while in others remnant-like particles were present, suggesting they were products of lipolysis. HDL were discoidal (16.2±4.1 nm long axis) suggesting LCAT was not active in the medium. There are significant differences and similarities in lipoproteins isolated from primary hepatocytes versus those from human hepatoma lines. In the former, VLDL is the major species, while in hepatomas HDL predominate. Presence of discoidal HDL in both cell systems strongly argues that these are a nascent HDL produced by the human liver *in vivo*.