

**P009** Human StarD5: localization and sterol-binding characteristics  
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Liver overexpression of StarD1, a mitochondrial targeted cholesterol binding protein, dramatically increases the rate of bile acid synthesis (BAS); raising fundamental questions not only about StarD1's role, but of additional liver-related START (*StarD1-related lipid transfer*) domain proteins in the regulation of hepatocellular cholesterol homeostasis. The recently discovered StarD5 mRNA was detected in high concentration in the liver. Unlike StarD1, overexpression of StarD5 had little effect on BAS while leading to an increase in intracellular cholesterol. Our objective was to characterize StarD5 by determining its sterol binding abilities and localization within the liver. StarD5 selectively bound cholesterol and 25-hydroxycholesterol (25OHChol), but not any of the other tested sterols or bile acids. Western analysis detected high levels of StarD5 in human macrophages. However, StarD5 was not found in human hepatocytes, fibroblasts, endothelial cells, astrocytes, brain tissue or HepG2 cells. Liver immunohistochemistry demonstrated StarD5 protein localized to Kupffer cells. Macrophage immunocytochemistry localized StarD5 to the Golgi and cytosol. The presence of StarD5 can be ascribed to its localization within tissue macrophages/Kupffer cells. Its subcellular localization and selective binding of cholesterol/25OHChol has led us to hypothesize StarD5 as a 'regulatory sterol' transporter within the cell with Golgi targeting. Its localization and selective sterol binding suggest a role in the immune mediated atherogenesis.