# Isolation and Partial Characterization of Cholesterol Pronucleating Hydrophobic Glycoproteins Associated to Native Biliary Vesicles

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## Abstract

Cholesterol is transported both in unilamellar phosphatidylcholine vesicles and in bile salts-mixed mtcelles in native bile. The vesicular carrier of biliary lipids apparently has a well defined protein profile with a potent cholesterol crystallization-promoting activity. This study was conducted to identify and further characterize these vesicular proteins and to test the effect of isolated vesicular proteins on the cholesterol crystal formation in supersaturated model bile. The results confirmed that proteins are a constant component of highly purified biliary vesicles both in hepatic and gallbladder bile. Immunoglobuhns (IgA, IgG and IgM) and albumin are associated to the purified hepatic biliary vesicles. Furthermore, four different hydrophobic glycoproteins with a molecular mass of 130, 114,86, and 62-67 kDa were isolated. These glycoproteins showed no reactivity with anti-human whole serum or anti-immunoglobulin antibodies, suggesting that these proteins are biliary-specific. Isolated 130, 114 and 62-67 kDa vesicular glycoprotems significantly decreased the cholesterol nucleation time in artificial model bile. We concluded that some, but not all, vesicular-bound hydrophobic glycoproteins have cholesterol pronucleating activity and they may be involved in the pathogenesis of cholesterol gallstone disease.

Keywords: Biliary vesicle, Cholesterol crystallization, Giycoprotein.