Supplementary information

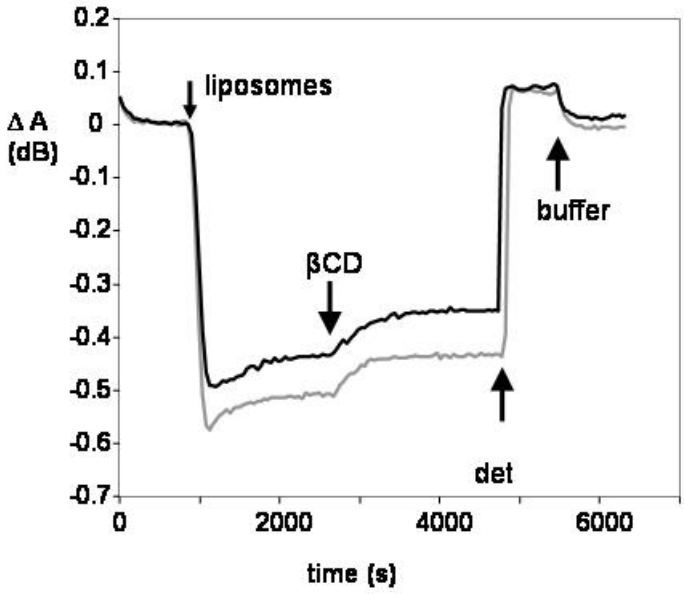

Figure S1: The net change in acoustic signal (insertion loss, or amplitude A) as a function of time during addition of liposomes, addition of 3 mg/ml βCD and regeneration of the surface by a detergent rinse. The start times of the different steps are indicated by arrows; intervening buffer rinses are not indicated. The grey line indicates pure OPPC and the black line indicates OPPC with $\chi_{SPM} = 0.1$.

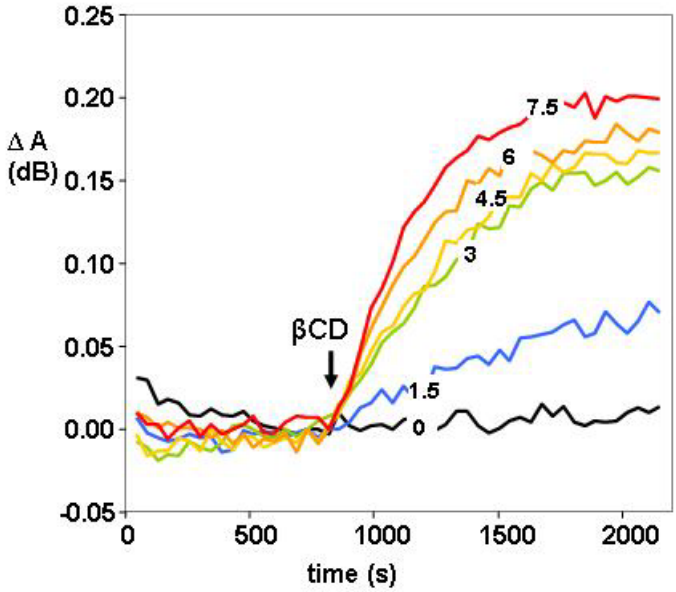

Figure S2: The net change in acoustic signal (insertion loss) as a function of time during addition of a range of concentrations of βCD (indicated on figure, in mg/ml) to OPPC liposomes with $\chi_C = 0.3$.

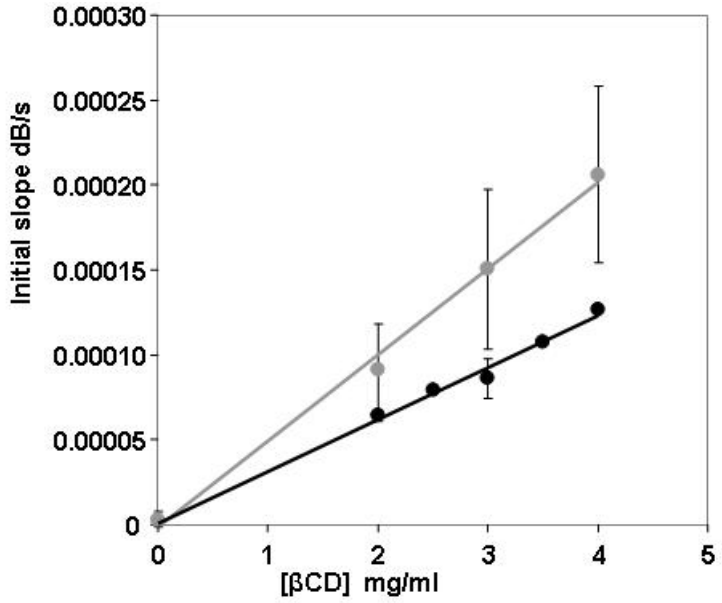

Figure S3: The initial change in slope of the acoustic signal (insertion loss) on addition of βCD to adsorbed liposomes, as a function of βCD concentration. The grey line indicates pure OPPC and the black line indicates OPPC with $\chi_{SPM} = 0.1$.

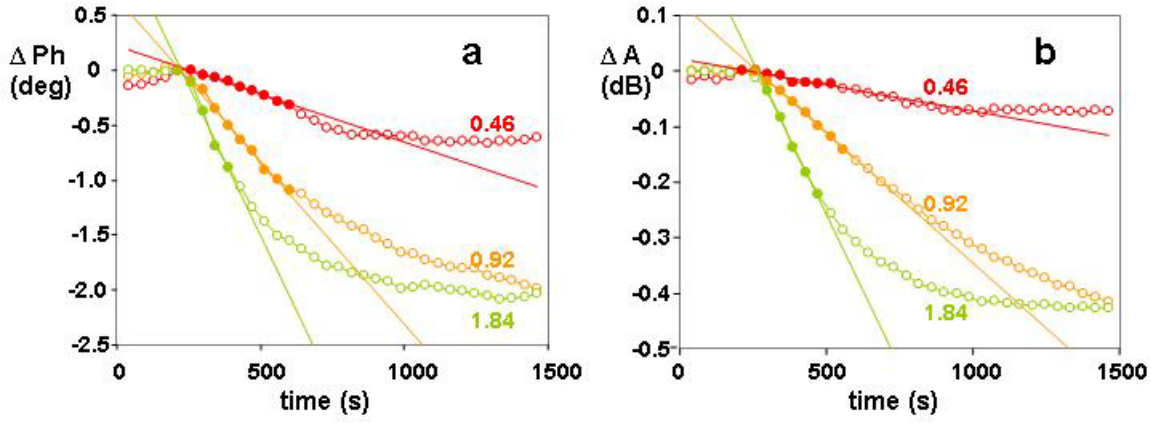

Figure S4a, S4b: The net change in acoustic signal (phase, a and insertion loss, b) as a function of time during addition of a range of concentrations of WSC (indicated on figure, in mg/ml) to OPPC liposomes with $\chi_C = 0$.

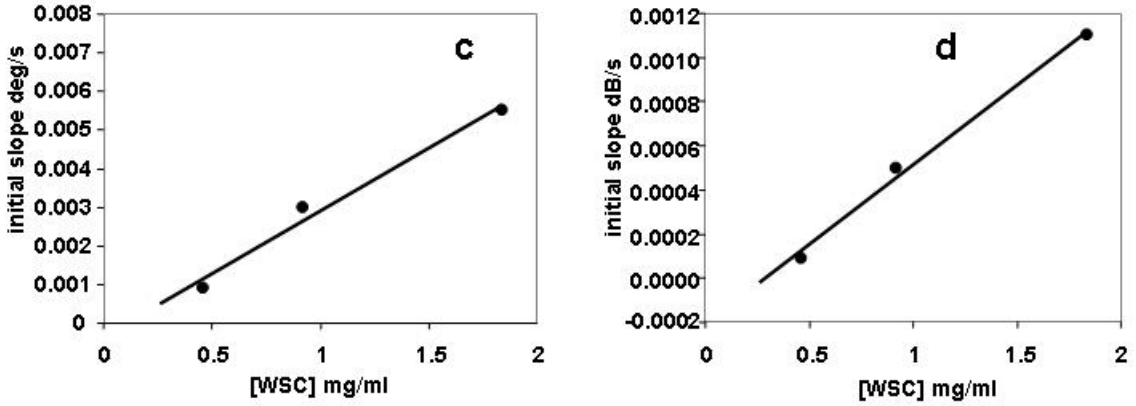

Figure S4c, S4d: The initial change in slope of the acoustic signal (phase, c and insertion loss, d) on addition of WSC to adsorbed OPPC liposomes, as a function of WSC concentration. These figures indicate that it would, in theory, be possible to determine the affinity of liposomes for cholesterol by insertion of cholesterol from a saturated cholesterol-cyclodextrin complex. There are, however, experimental difficulties associated with such measurements due to the fact that these complexes are not stable when stored in plastic[S1], resulting in precipitation of the cholesterol as the complex is pumped through the plastic tubing towards the flow cell that is held in place over the acoustic device.

S1: A.E. Christian, M.P. Haynes, M.C. Phillips and G.H. Rothblat, *J Lipid Res.*, 1997, **38**, 2264-2272.

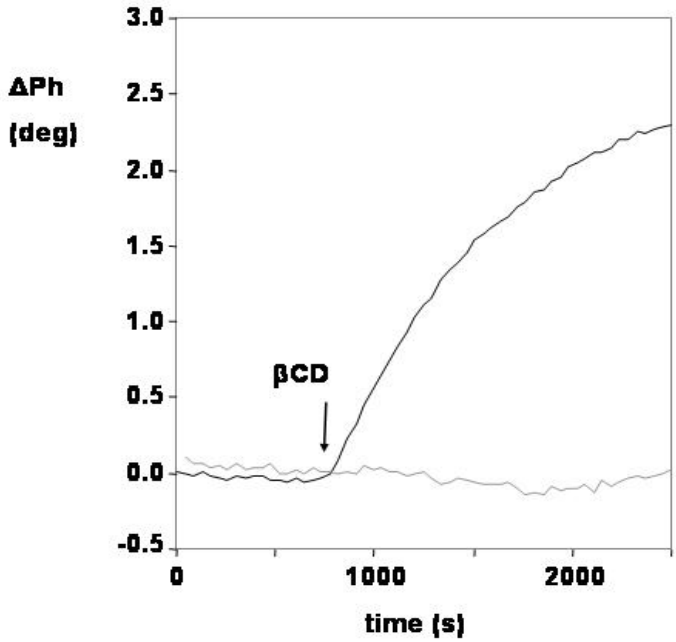

Figure S5. Removal of cholesterol from liposomes by addition of βCD at 3 mg/ml at the time indicated on the figure; the grey line represents $\chi_C = 0$ and the black line represents $\chi_C = 0.35$.