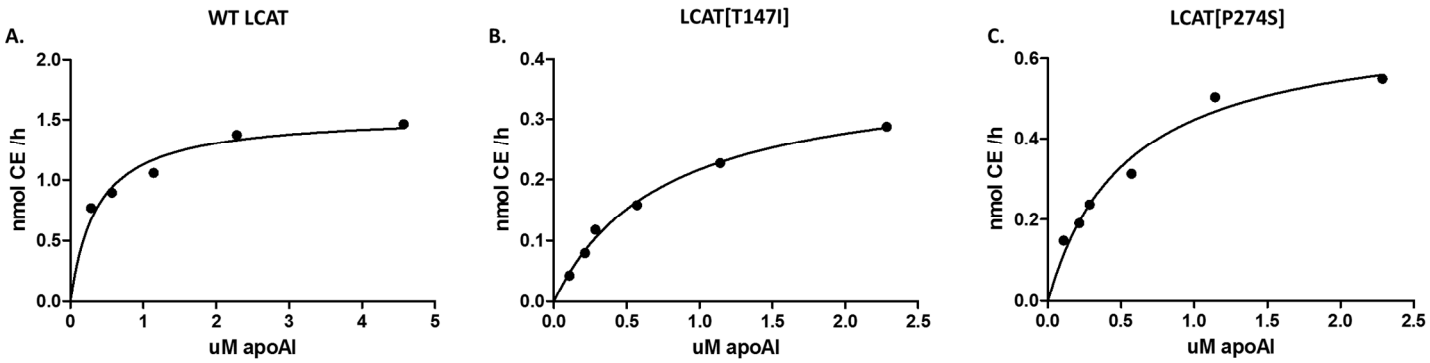
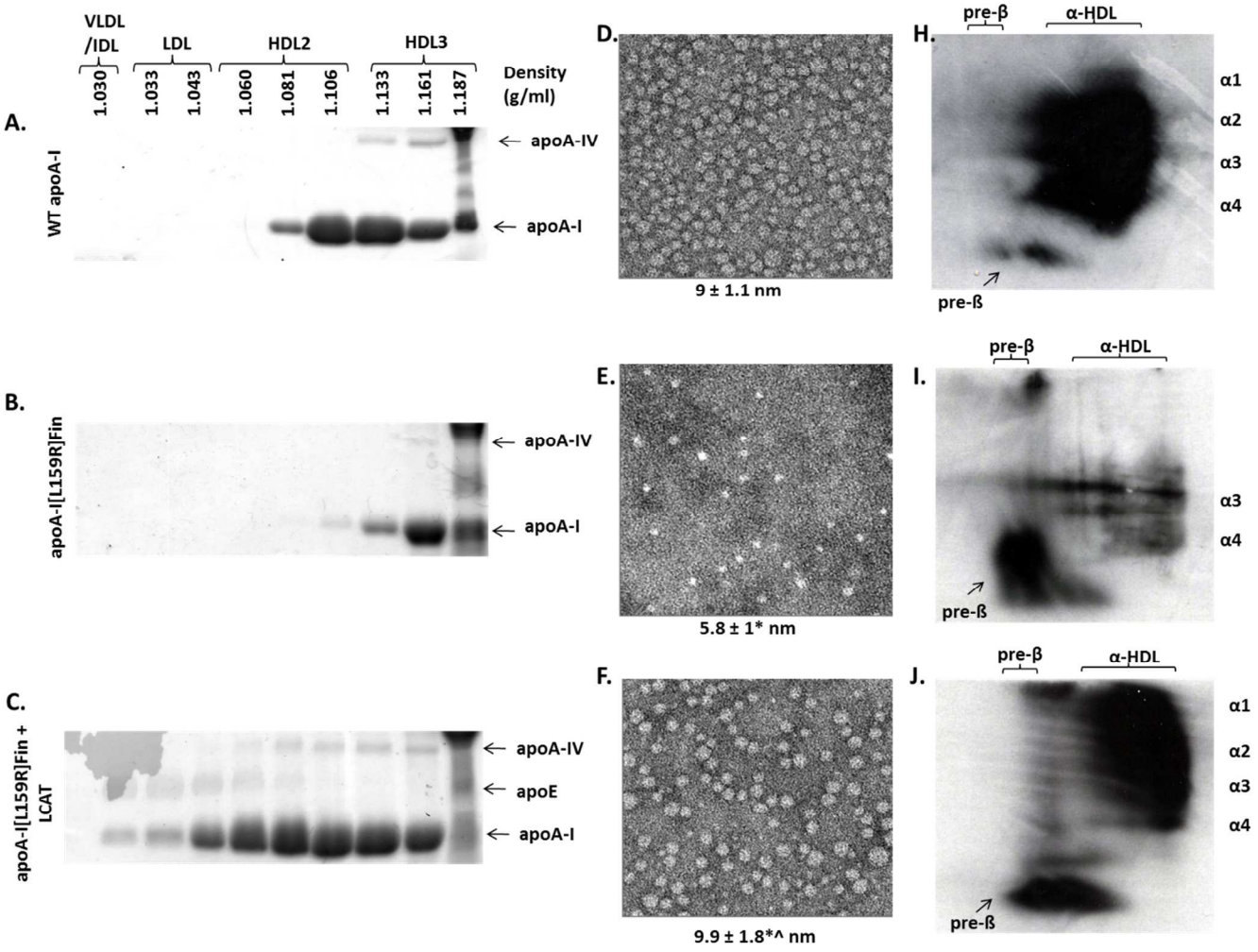
**SUPPLEMENTAL DATA**

**Supplemental Figure 1**




**Supplemental Figure 1 A-C:** Representative set of velocity versus apoA-I concentration curves that provided the apparent Km and Vmax of WT LCAT (A), LCAT[T147I] (B) and LCAT[P274S] (C). The average of 3-5 such experiments was used to derive the $Km_{app}$ and $Vmax_{app}$ values. The average $Km_{app}$ (μM) was 0.42 ± 0.13, 0.46± 0.22 and 0.48 ± 0.19 for WT LCAT, LCAT[T147I] and LCAT[P274S] respectively. The average $Vmax_{app}$ (μM) was 1.39 ± 0.21, 0.34 ± 0.07 and 0.69 ± 0.12 for WT LCAT, LCAT[T147I] and LCAT[P274S] respectively. For this analysis, the reconstituted HDL (rHDL) particles were used as the substrate. The cholesterol esterification rate was expressed as nanomoles of cholesteryl ester formed per hour. The data were fitted to Michaelis-Menten kinetics, using Prism (GraphPad Software, Inc.)

**Supplemental Figure 2**




**Supplemental Figure 2 A-J**: Analysis of the plasma of apoA-I$^{-/-}$ mice infected with adenoviruses expressing the WT apoA-I and the apoA-I[L159R]$_{FIN}$ alone or in combination with WT LCAT by: density gradient ultracentrifugation and SDS-PAGE (A-C), EM analysis of HDL fractions 6-7 obtained by density gradient ultracentrifugation (D-F) and two dimensional gel electrophoresis of plasma (H-J). Statistically significant differences at $p<0.05$ in the size of the HDL particles generated in mice expressing WT apoA-I as compared to particles generated in mice expressing the apoA-I[L159R]$_{FIN}$ alone or in the presence of WT LCAT is indicated by (*****). Statistically significant differences at $p<0.05$ in the size of the HDL particles

generated in mice expressing the apoA-I[L159R]$_{FIN}$ alone as compared to particles generated in mice expressing the apoA-I[L159R]$_{FIN}$ in the presence of WT LCAT is indicated by (**^**).