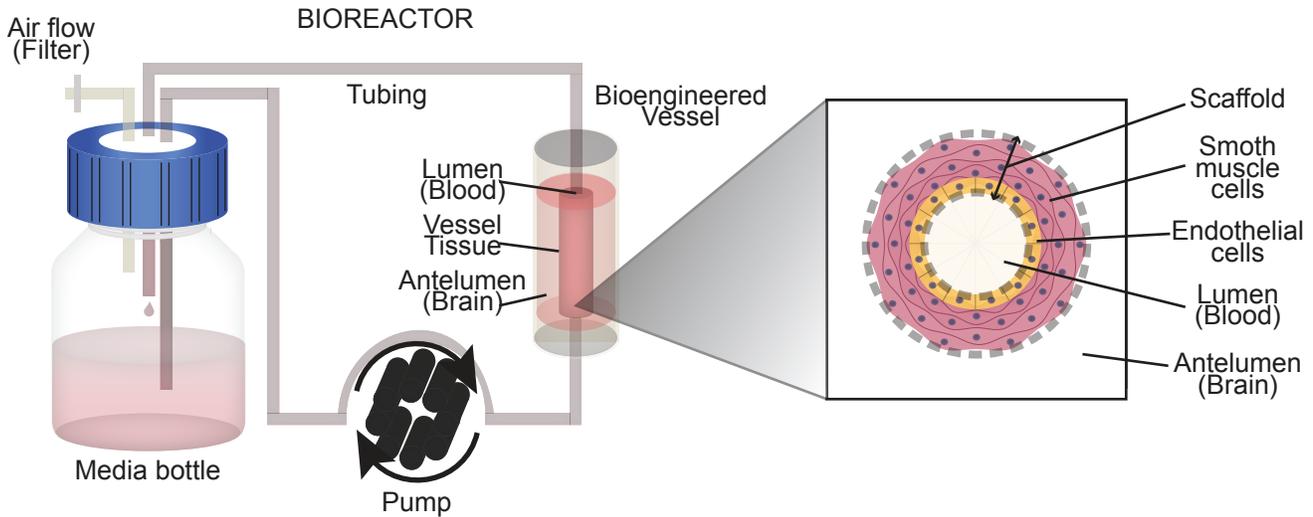
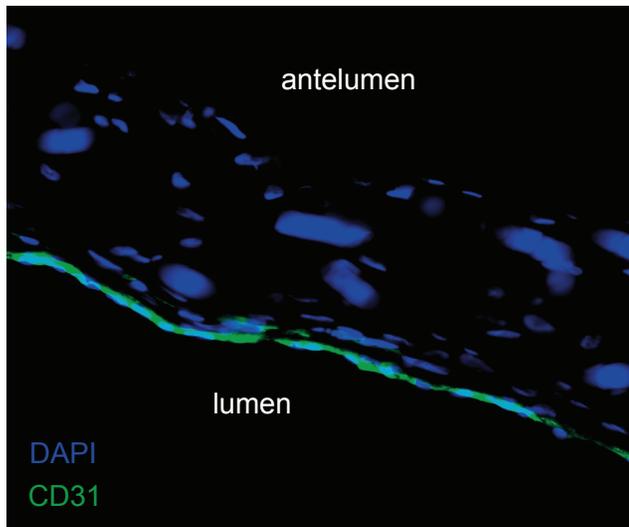


## Supplemental Figure 1

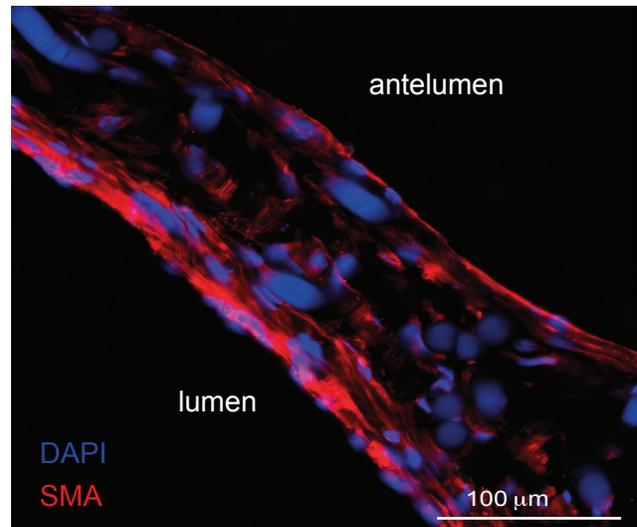
**a**



**b**



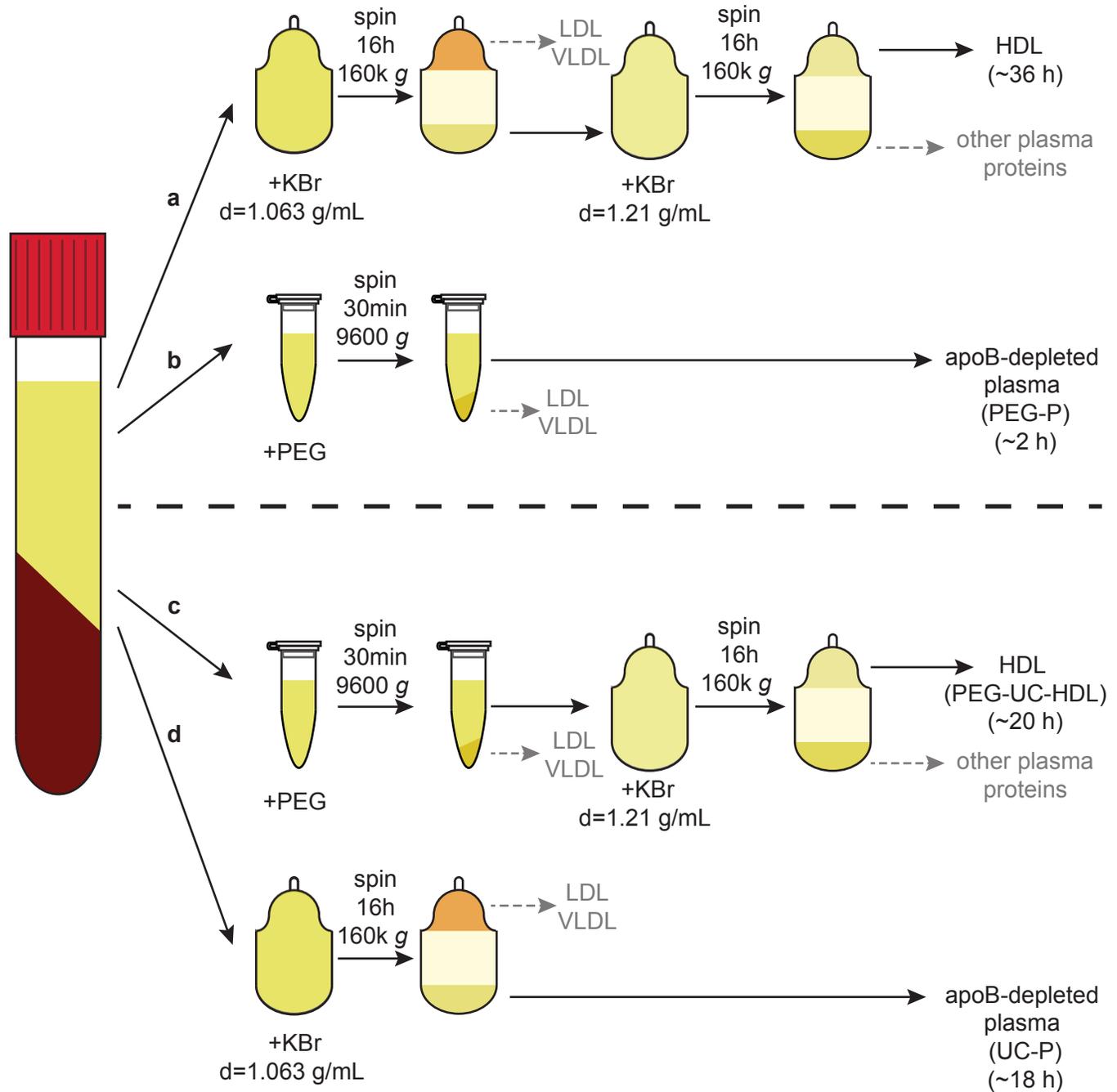
**c**



### Supplemental Figure 1: *Bioengineering 3D human arteries.*

(a) 3D bioengineered human vessels were subjected to abluminal A $\beta$ 42 treatment with or without luminal HDL treatment. Histological characterization of the vessels shows (b) a monolayer of endothelial cells on the luminal aspect visualized with CD31 and (c) multiple layers of smooth muscle cells throughout the vessel visualized with smooth muscle actin (SMA). CD31: cluster of differentiation 31, SMA: smooth muscle actin, DAPI: 4',6-diamidino-2-phenylindole.

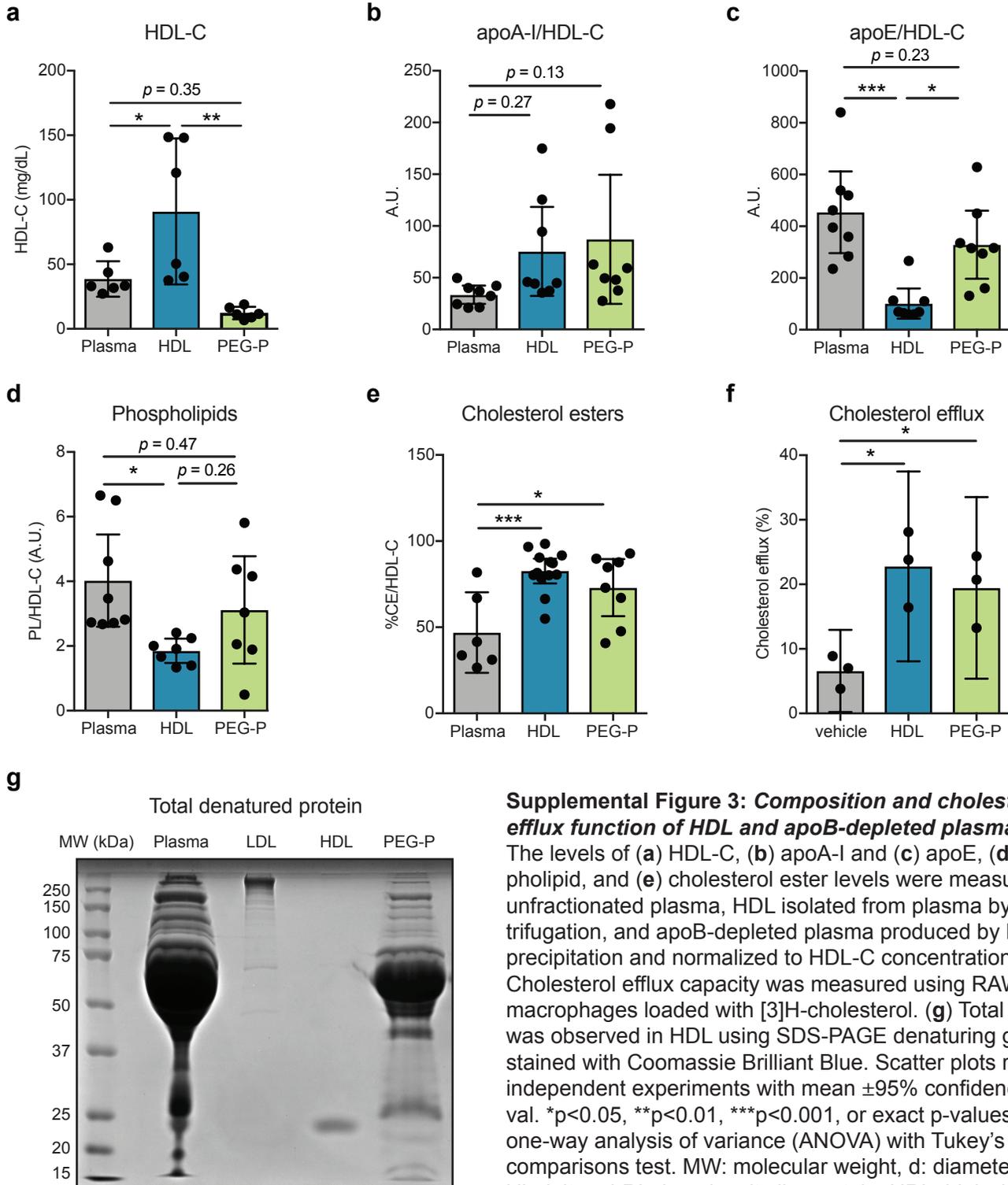
## Supplemental Figure 2



### Supplemental Figure 2: HDL isolation and depletion of apoB-containing lipoproteins from human plasma.

HDL or apoB-depleted plasma was prepared from young, healthy donor plasma by (a) sequential density gradient ultracentrifugation (HDL) using KBr, (b) polyethylene glycol (PEG-P) precipitation of non-HDL lipoproteins, (c) a combination of the two methods (PEG-UC), or (d) a single UC spin (UC-P). KBr: potassium bromide, LDL: low-density lipoprotein, VLDL: very low-density lipoprotein, HDL: high-density lipoprotein.

## Supplemental Figure 3



### Supplemental Figure 3: *Composition and cholesterol efflux function of HDL and apoB-depleted plasma.*

The levels of (a) HDL-C, (b) apoA-I and (c) apoE, (d) phospholipid, and (e) cholesterol ester levels were measured in unfractionated plasma, HDL isolated from plasma by ultracentrifugation, and apoB-depleted plasma produced by PEG precipitation and normalized to HDL-C concentration. (f) Cholesterol efflux capacity was measured using RAW 264.7 macrophages loaded with [<sup>3</sup>H]-cholesterol. (g) Total protein was observed in HDL using SDS-PAGE denaturing gels stained with Coomassie Brilliant Blue. Scatter plots represent independent experiments with mean  $\pm$  95% confidence interval. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ , or exact p-values by one-way analysis of variance (ANOVA) with Tukey's multiple comparisons test. MW: molecular weight, d: diameter, kDa: kilodalton, LDL: low-density lipoprotein, HDL: high-density lipoproteins isolated by sequential density gradient ultracentrifugation, PEG-P: apoB-depleted plasma by polyethylene glycol precipitation, A.U.: arbitrary units, SDS-PAGE: sodium dodecyl sulphate polyacrylamide gel electrophoresis.