

Supplementary Information

Caveolin-1 endows order in cholesterol-rich detergent resistant membranes

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	PC		PE		SM	
	WT	KO	WT	KO	WT	KO
total SFA (%)	86,88±2,17	85,32±1,34	37,69±3,44	39,1±3,82	74,16±4,44	72,95±5,23
total MUFA (%)	7,55±2,40	8,90±2,31	12,47±3,16	14,1±3,90	25,73±4,11	25,60±4,37
total PUFA (%)	5,57±3,06	5,78±2,47	49,84±5,96	46,8±6,24	0,11±0,00	1,45±3,55
total MUFA+PUFA(%)	13,12±2,03	14,68±1,69	62,31±3,43	60,9±3,83	25,84±4,11	27,05±5,25
Unsaturation Index (U.I)	0,32±0,11	0,33±0,07	5,64±1,24	5,1±0,89	0,35±0,08	0,40±0,13
ω6 (%)	5,12±2,91	5,52±2,38	20,92±2,28	19,4±3,03	0,00	0,00
ω3 (%)	0,39±0,48	0,32±0,29	29,43±4,77	27,3±3,60	0,00	0,00
ω6/ ω3	15,29±8,91	22,47±15,86	0,72±0,11	0,7±0,11	-	-
18:1 (n-9+n-7)	5,84±1,74	6,6±1,15	-	-	-	-

Table S2. Fatty acid composition of DRMs. Main phospholipid classes (PC, PE) and sphingomyelin (SM) of DRMs from lungs of WT and KO mice were extracted and analyzed by gas chromatography. Percentages of total saturated (SFA), mono (MUFA) and polyunsaturated (PUFA) fatty acids are presented as. mean±s.d. of seven separate experiments (*p < 0.05).

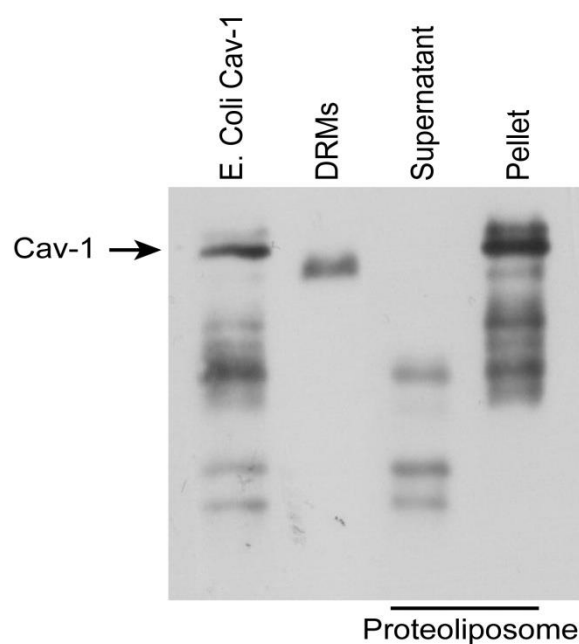


Figure S1. Cav-1 insertion in protein free WT DRMs derived liposomes. Proteoliposomes formation was evaluated for the presence of recombinant His-tagged Cav-1 molecules in the pellet recovered after centrifugation. Western blot analysis for Cav-1 shows from left to right recombinant Cav-1, WT DRM, and Cav-1 containing proteoliposomes. After proteoliposomes centrifugation Cav-1 fragments are differently distributed either in the pellet or in the supernatant according to their affinity for lipids.

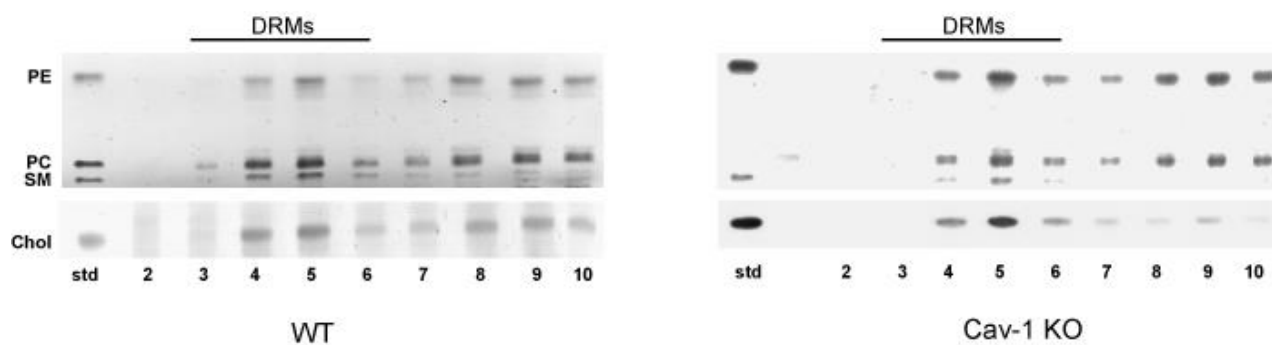


Figure S2. Characterization of DRMs lipids. Post-nuclear homogenates from WT and Cav-1 KO lung tissue were extracted using 1 % TX-100 and fractionated in 5–30 % sucrose gradient. Equal volumes of sucrose gradient fractions were subjected to TLC analysis. Fractions 3–6 corresponding to DRMs showed enrichment of sphingomyelin (SM) and cholesterol (Chol).

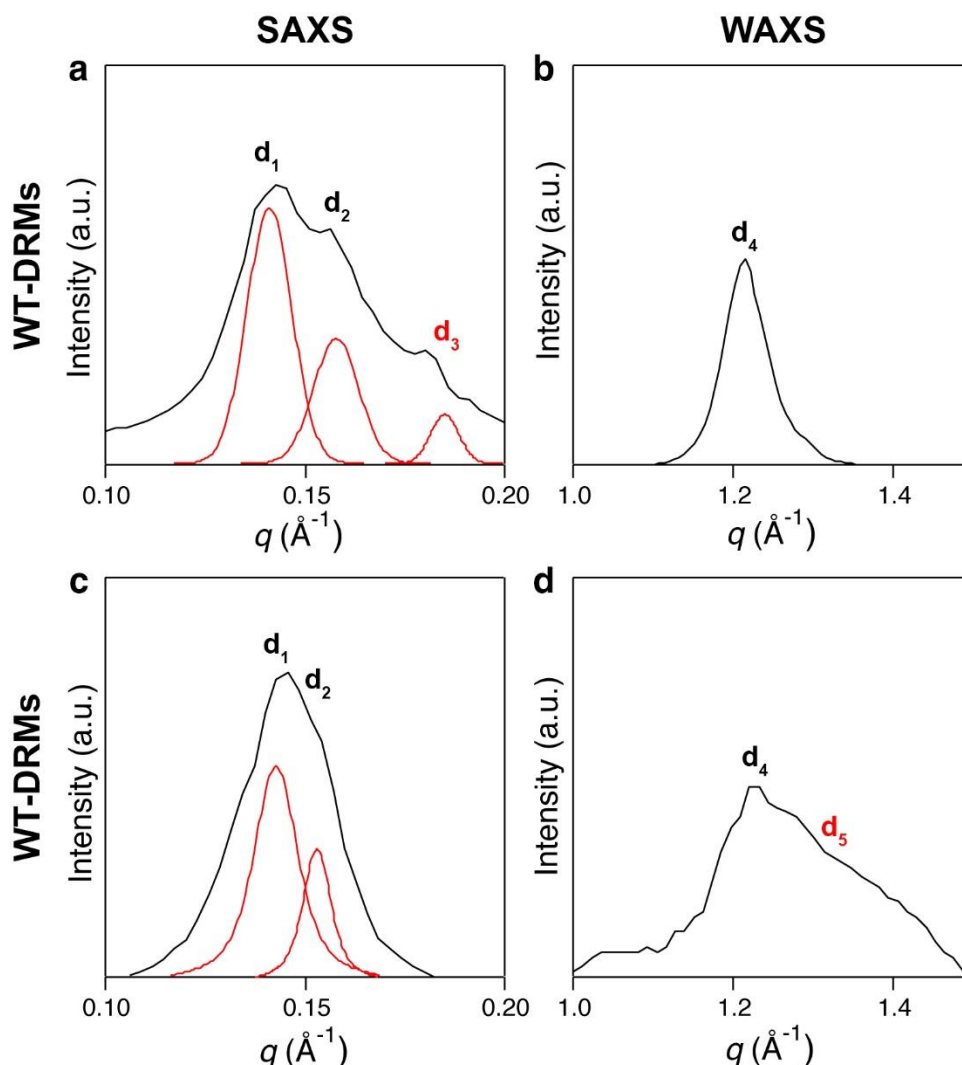


Figure S3. X-ray scattering analysis of DRMs from WT and Cav-1 KO mouse adipose tissue: (a) The SAXS pattern of WT DRMs was dominated by two lamellar phases (d-spacings of $d_1 = 43$ and $d_2 = 39$ Å) coexisting with a phase characterized by $d_3 = 34.0$ Å (symbol in red). (b) The wide-angle X-ray scattering (WAXS) pattern of lung WT-DRMs shows a sharp diffraction peak due to a lipid lattice with repeat spacing of $d_4 = 4.2$ Å. (c) In the SAXS pattern of lung KO-DRMs, only two diffraction peaks of lamellar phases were observed ($d_1 = 43$ and $d_2 = 39$ Å). (d) The WAXS scan of lung KO-DRMs exhibited a double peak ($d_4 = 4.2$ and $d_5 = 3$ Å), typical of disordered lipid phases.