Supplemental data

Supplemental Table 1. Sequences of primers used for qRT-PCR analysis

	Forward (5'-3')	Reverse(5'-3')
Actin	ACACTGTGCCCATCTACGAG	CAGCACTGTGTTGGCATAGAG
Perilipin 2	GATTGAATTCGCCAGGAAGA	TGGCATGTAGTCTGGAGCTG
FAS	TCCAAGACTGACTCGGCTACTGAC	GCAGCCAGGTTCGGAATGCTATC
ACC1	AGCTGATCCTGCGAACCT	GCCAAGCGGATGTAAACT
SCD1	AAGCTCTACACCTGCCTCTTC	GTGACTCCCGTCTCCAGTTCT
DGAT1	TCCGTCCAGGGTGGTAGTG	TGAACAAAGAATCTTGCAGACGA
DGAT2	CTGGCTGATAGCTGCTCTCTACTTC	TGTGATCTCCTGCCACCTTTC
PPARα	ACGGCAATGGCTTTATCA	CGCTGCGTCGGACTCGGT
ACC2	GTGTTGGACTCTCAAGGACAG	GGATGATGGGGAGTTTTCCA
CPT1	ACCACTGGCCGCATGT	CTCCATGGCGTAGTAGTTGCT
CPT2	ACCTGCTCGCTCAGGATAAAC	CTTAGCAGCGGTGACGCCAGC
COX4	CGGCGTGACTACCCCTTG	TGAGGGATGGGGCCATACA

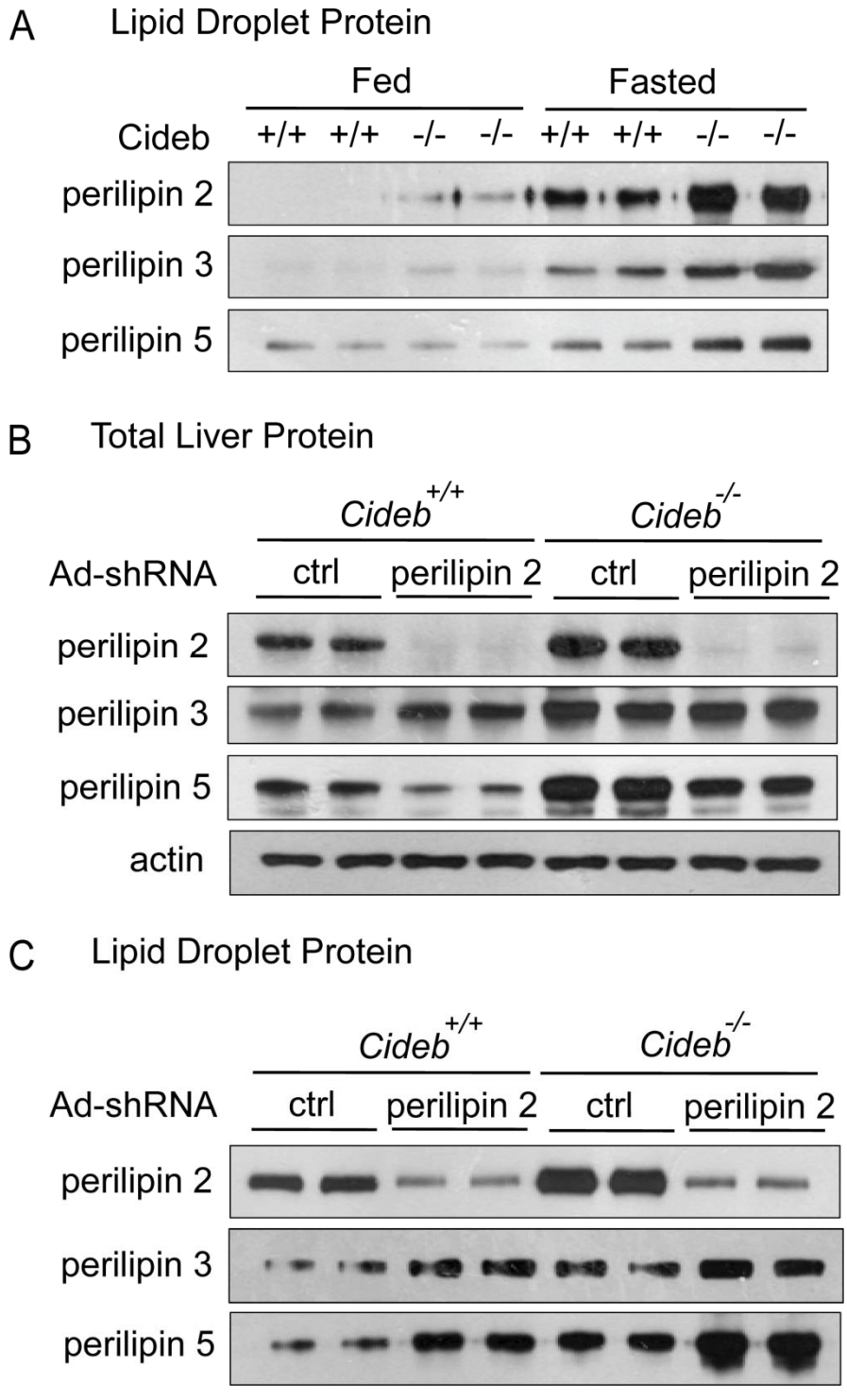
Supplemental Figure 1. Absence of Cideb and perilipin 2 increases the levels of perilipin 3 and perilipin 5 on lipid droplets. (A) Western blot showing increased perilipin 2, perilipin3 and perilipin 5 protein levels on the lipid droplets from *Cideb*$^{-/-}$ (-/-) livers under fasting conditions. **(B)** Western blot showing decreased perilipin 5 and no change in perilipin 3 levels in the absence of perilipin 2 in wild-type and *Cideb*$^{-/-}$ livers under fasting conditions. **(C)** Knockdown of perilipin 2 increased perilipin3 and perilipin 5 protein levels on the lipid droplets from wild-type and *Cideb*$^{-/-}$ livers under fasting conditions.

Supplemental Figure 2. Knockdown of perilipin 2 increases the levels of mature VLDL particles in the Golgi fractions from wild-type livers under fasting conditions. Density distribution of apoB-containing lipoproteins in the Golgi with or without perilipin 2 knockdown. ApoB-containing lipoproteins were isolated from the lumenal contents of the Golgi fractions by sucrose density gradient centrifugation. ApoB was immunoprecipitated from each fraction, separated by SDS-PAGE and assessed by fluorography. The labels at the top of the western blots are the measured densities, indicating the expected distributions of the lipoproteins. The intensity of each band was estimated using Bio-Rad Quantity One software. The results shown are representative of two independent experiments. Mice were fasted for 12 hr. IDL/LDL,

intermediate/low-density lipoproteins; HDL, high-density lipoproteins.

Supplemental Figure 3. Perilipin 2 does not affect hepatic TAG accumulation and VLDL lipidation under fed conditions. (A) Similar hepatic TAG levels with or without perilipin 2 in wild-type (+/+) and *Cideb*$^{-/-}$ (-/-) mice (n=3 each) under fed conditions. Data are the means ± SEM. **(B-C)** Knockdown of perilipin 2 does not increase mature VLDL particles accumulation in the Golgi fractions of wild-type **(B)** or *Cideb*$^{-/-}$ **(C)** mice under fed conditions. ApoB-containing lipoproteins were isolated from the lumenal contents of the Golgi fractions by sucrose density gradient centrifugation. ApoB was immunoprecipitated from each fraction, separated by SDS-PAGE and assessed by fluorography. The labels at the top of the western blots are the measured densities, indicating the expected distributions of the lipoproteins. The intensity of each band was estimated using Bio-Rad Quantity One software. The results shown are representative of two independent experiments. Mice were sacrificed in fed conditions. IDL/LDL, intermediate/low-density lipoproteins; HDL, high-density lipoproteins.

Figure S1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Fasted
Cideb
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perilipin 3
perilipin 5
B
Total Liver Protein
Cideb+/+
Cideb-/-
Ad-shRNA
ctrl
perilipin 2
ctrl
perilipin 2
perilipin 2
perilipin 3
perilipin 5
actin
C
Lipid Droplet Protein
Cideb+/+
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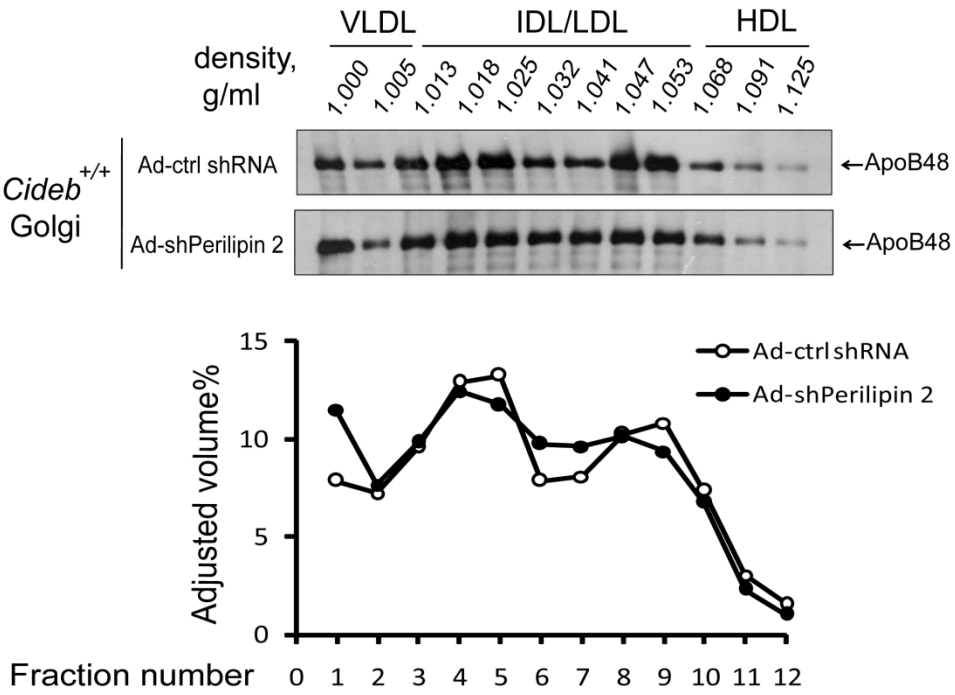
perilipin 2
perilipin 3
perilipin 5

Figure S2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IDL/LDL
HDL
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1.005
1.013
1.018
1.025
1.032
1.041
1.047
1.053
1.068
1.091
1.125
Cideb+/+ Golgi
Ad-ctrl shRNA
Ad-shPerilipin 2
←ApoB48
←ApoB48
Adjusted volume%
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10
5
0
Ad-ctrl shRNA
Ad-shPerilipin 2
Fraction number
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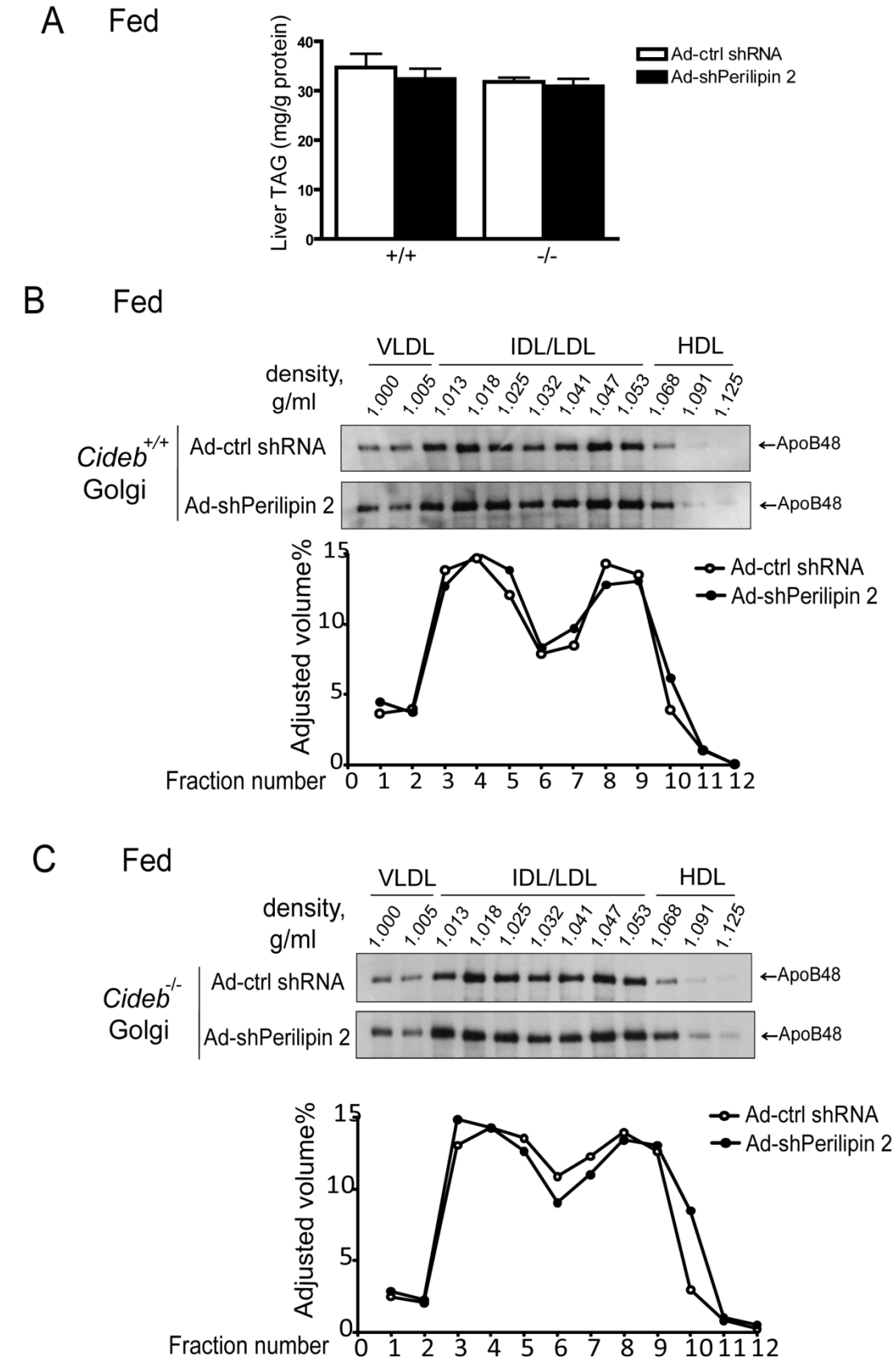
Figure S3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Liver TAG (mg/g protein)
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30
20
10
0
+/+
-/-
Ad-ctrl shRNA
Ad-shPerilipin 2
B Fed
VLDL
IDL/LDL
HDL
density, g/ml
1.000
1.005
1.013
1.018
1.025
1.032
1.041
1.047
1.053
1.068
1.091
1.125
Cideb+/+ Golgi
Ad-ctrl shRNA
Ad-shPerilipin 2
←ApoB48
←ApoB48
Adjusted volume%
15
10
5
0
Fraction number
0 1 2 3 4 5 6 7 8 9 10 11 12
Ad-ctrl shRNA
Ad-shPerilipin 2
C Fed
VLDL
IDL/LDL
HDL
density, g/ml
1.000
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1.013
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1.025
1.032
1.041
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1.091
1.125
Cideb-/- Golgi
Ad-ctrl shRNA
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←ApoB48
Adjusted volume%
15
10
5
0
Fraction number
0 1 2 3 4 5 6 7 8 9 10 11 12
Ad-ctrl shRNA
Ad-shPerilipin 2