

Supplement

Supplemental figure legends:

Supplemental Fig. I. The effect of SMS2 overexpression and deficiency on liver lipid

accumulation. Liver samples were embedded in Tissue-Tek optimal cutting temperature compound (Sakura Finetek), frozen, and sectioned (7 μm), then were stained Oil Red O and hematoxylin. Sections were photographed at x100 and x250 magnification. Panel A-D, livers from control and SMS2 Tg mice on chow. Panel E-H, livers from control and SMS2 Tg mice on a high fat high cholesterol diet. Panel I-L, mouse livers from control and SMS2 KO mice on a high fat high cholesterol diet. This set of result is the representatives of 6 WT and 6 SMS2LTg mice, and 6 WT and 6 SMS2 KO mice.

Supplemental Fig. II. Insulin tolerance test. Mice were fasted for 15 h, insulin (0.75 units per kg of body weight) was injected via i.p. and then blood glucose levels were measured immediately before and 15, 30, and 60 min after insulin injection. Values are Mean \pm S.E., n = 9, *P<0.05.

Supplemental Fig. III. Liver plasma membrane purity determinastion. Plasma membrane isolation from mouse liver. The purity of cytoplasm (Cyto), total subcellular organelle membranes (TM), and plasma membranes (PM) were determined by Western blot. Na⁺/K⁺ATPase is plasma membrane marker and Cytochrome C is mitochondrial marker.

Supplemental Fig. IV. Liver ABCA1 Western blotting. SDS-PAGE was performed on 4–15%SDS-polyacrylamide gradient gel using mouse liver homogenate, and the separated proteins were transferred to nitrocellulose membrane. Western blot analysis for ABCA1 was performed. Values are Mean \pm S.E., N=3.

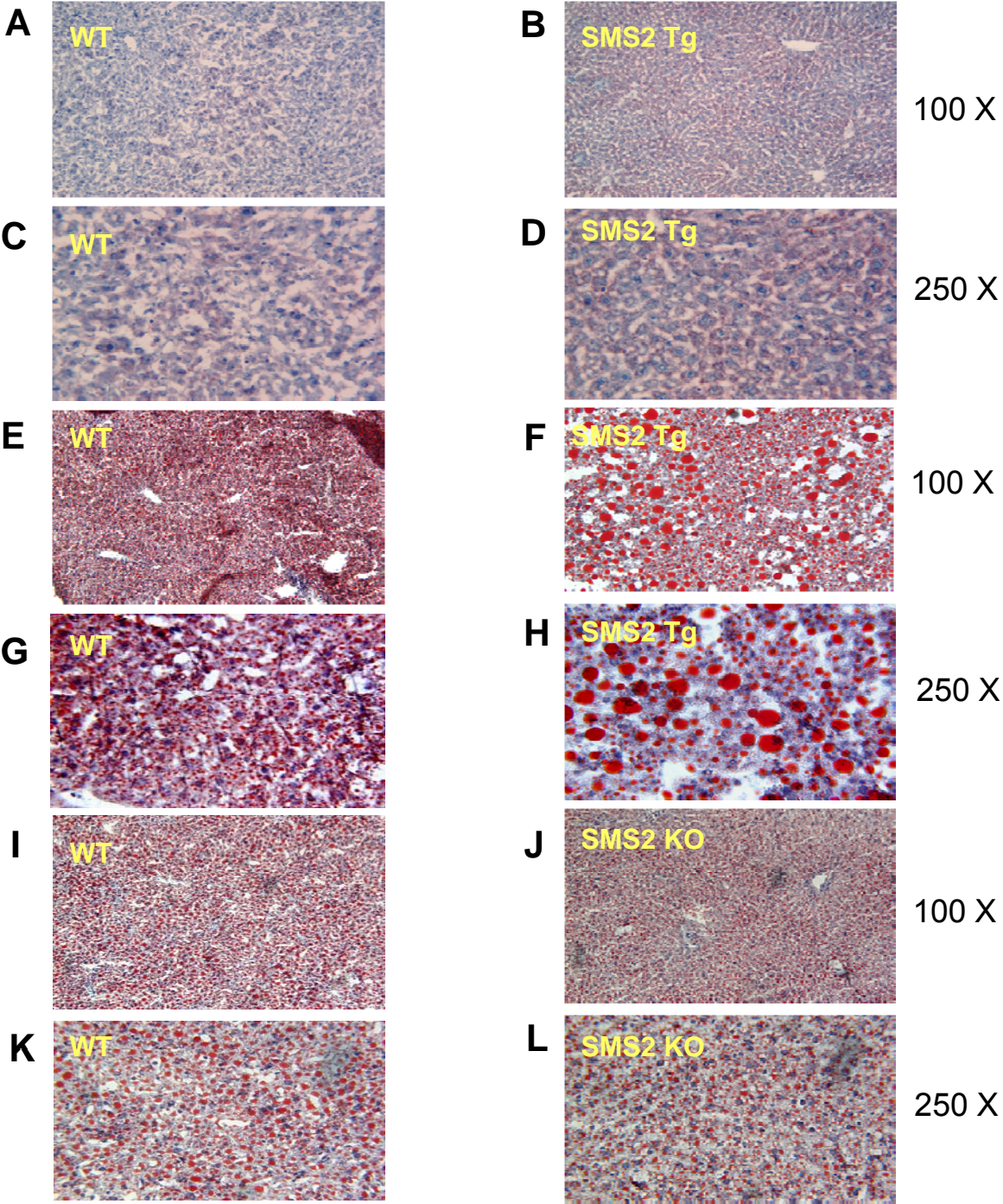
Supplemental Fig. V. PPAR- γ antagonist GW9662 ameliorate liver steatosis. PPAR γ antagonist GW9662 was injected into SMS2 Tg mice (i.p., 2 mg/kg body weight per day) for four weeks, and then the mice were sacrificed and the liver triglyceride was measured. N=5, *P <0.05.

Supplemental Table I. Liver lipid measurement in SMS2 KO, SMS2LTg, and WT mice.

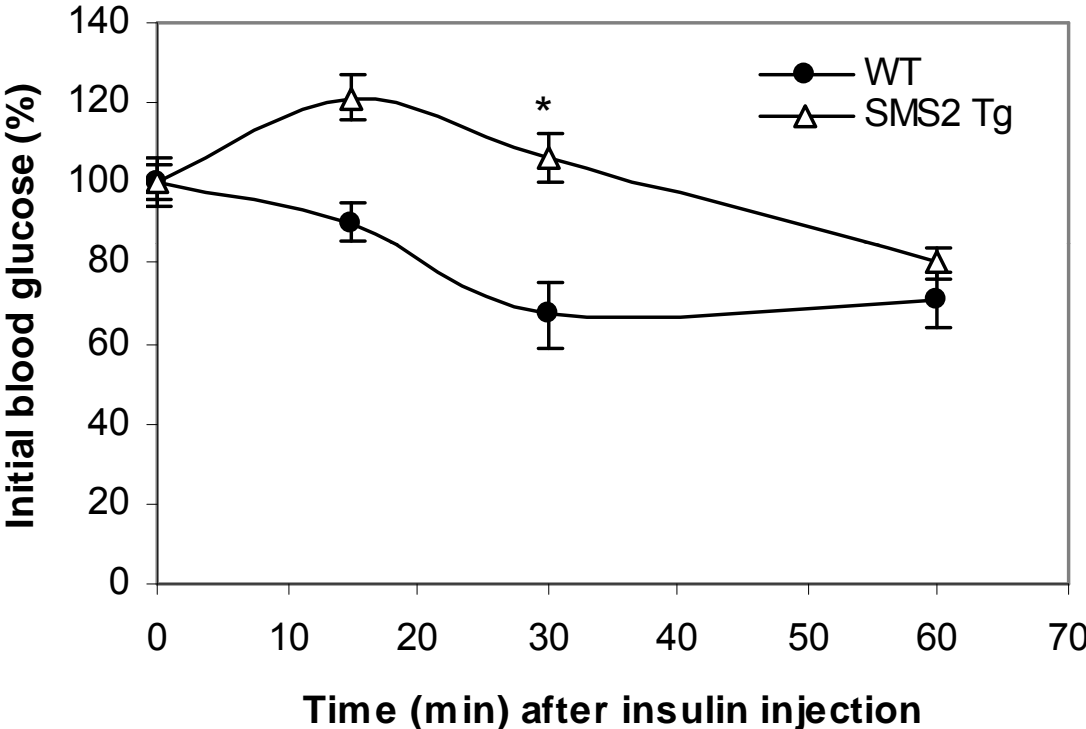
Mice	Sph	S-1-P (ng/mg liver)	DHS-1-P
WT	1.9 \pm 0.2	0.15 \pm 0.03	0.18 \pm 0.01
SMS2 KO	2.1 \pm 0.3	0.16 \pm 0.02	0.17 \pm 0.02
WT	1.7 \pm 0.3	0.13 \pm 0.03	0.19 \pm 0.02
SMS2LTg	1.8 \pm 0.1	0.15 \pm 0.02	0.17 \pm 0.03

Value: mean \pm SD; n=4-5. Sph, sphingosine; S-1-P, sphingosine-1-phosphate; DHS-1-P, dihydroxyl-sphingosine-1-phosphate.

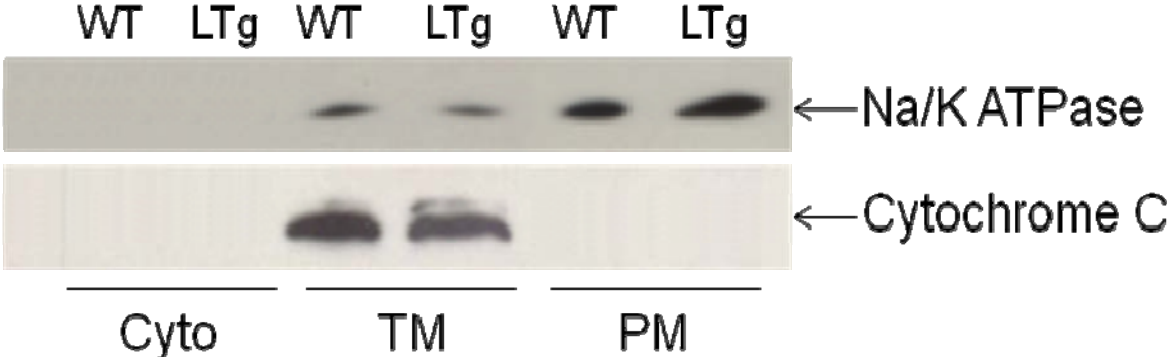
Supplemental Fig. I. Li et al.



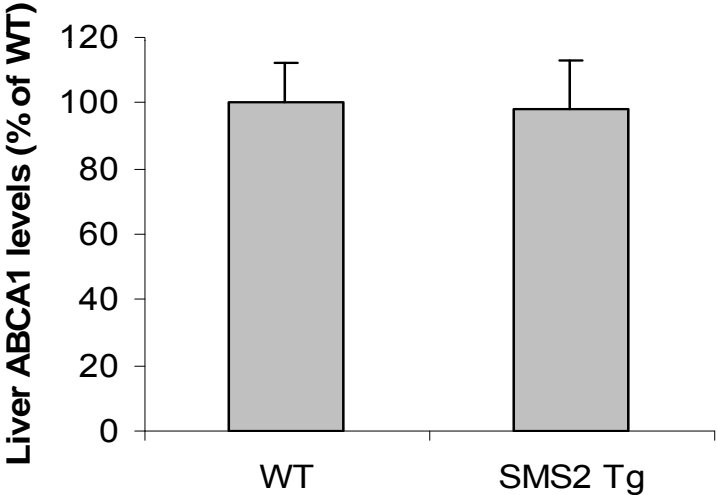
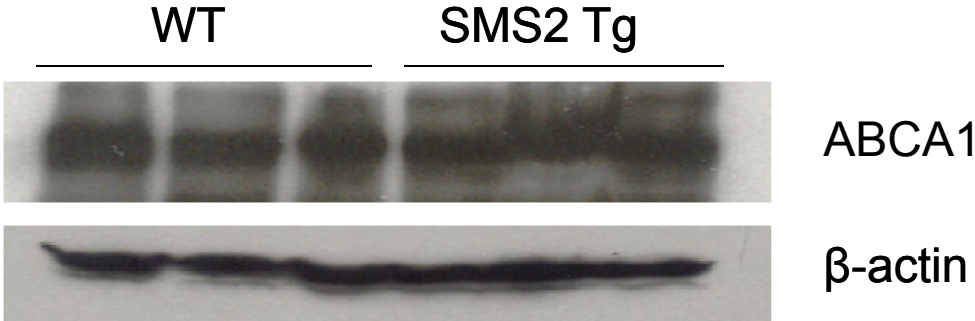
Supplemental Fig. II. Li et al.



Supplemental Fig. III. Li et al.



Supplemental Fig. VI. Li et al.



Liver TG

