

### Supplemental Fig. 1

***dSap-r* is expressed in visceral organs of *Drosophila*.** Digestive systems (A), male (B) and female (D) reproductive systems and fat bodies (C) are shown from adult controls (+/+) and flies expressing mCD8eGFP under the control of *dSap-r*<sup>NP7456</sup> GAL4. Organs are stained with the nuclear marker DAPI in (A). MT, Malpighian tubule; Mg, midgut; Hg, hindgut; T, testes; EB, ejaculatory bulb; AG, accessory gland; ED, ejaculatory duct; O, ovary; S, spermatheca. Scale bars: (A) 1000  $\mu\text{m}$  (vii) and 250  $\mu\text{m}$  (viii), (B-D) 500  $\mu\text{m}$ .

### Supplemental Fig. 2

#### Cell enlargement and increased storage in *dSap-r*<sup>C27</sup>/Df mutant glia.

Transmission electron micrographs of glia surrounding the antennal lobe of 22-day old wild type (+/+; A) and *dSap-r*<sup>C27</sup>/Df mutant (B) brains (n = 3). Electron-dense and electron-lucent vesicular storage is shown in *dSap-r*<sup>C27</sup>/Df mutant glia (B). Scale bar: 1  $\mu\text{m}$ .

### Supplemental Table 1: Internal Standard (IS) mix used for lipidomics

LIPID STANDARD	Catalog No.	SOURCE	Amount added to extract (pmol)
CerPE-C12 Sphingosyl PE [d17:1]	110753	Avanti Polar Lipids, USA	7.96
PC [17:0-14:1]	LM-1004		4.43
PE [17:1-14:0]	LM1104		4.29
C17-Cer [d18:1/17:0]	860517P		10.41
PE-OO [40:00]	999985P		7.16
Sphingosine [d17:1]	LM-2000		7.1
PI [17:0-14:1]	LM-1504		3.72
GluCer[d18:1/12:0]	860543P		7.89
PS [17:0-14:1]	LM-11304		2.95