Title:	The Role of dob Lipase in neuronal lipid droplet homeostasis in Drosophila melanogaster.
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Abstract:	Lipid homeostasis is vital to cellular health. An imbalance in the lipid levels in the body can cause metabolic and neurodegenerative diseases. In neurodegenerative diseases, factors such as mitochondrial dysfunction, oxidative stress, and protein aggregation can prompt dysfunctional lipid metabolism, leading to lipid droplet (LD) accumulation in the brain. In Drosophila, Brummer (bmm) lipase (ATGL homolog) is the primary lipase that regulates LD degradation; however, it is not involved in the degradation of neuronal LD. Screening has identified doppelganger von brummer (dob), a homolog of bmm, as a potential neuronal lipase. By using knockout and knockdown approaches in Drosophila fly lines, we were able to show that dob is indeed the lipase acting on LD in neurons. I also tested the redundancy of dob with PAPLA1 (DDHD2 homolog) and examined the relationship between neuronal LD accumulation and motion behavior. Identification of dob as a neuronal lipase can help to better understand neurodegenerative diseases and offer a new perspective for studying lipid homeostasis in the central nervous system..
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