

P018 Novel *Drosophila* mutants with discrepancies in iron metabolism

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Ferritin, a symmetric 24-subunit heteropolymer composed of Heavy and Light chains, is the primary iron-storage molecule in bacteria, plants and animals. We used a genetically engineered strain of the model organism *Drosophila melanogaster* which expresses a GFP-tagged *Ferritin I heavy chain homolog* from its native chromosomal locus and incorporates it into endogenous functional ferritin, enabling *in vivo* visualization of the protein, permitting easy assessment of ferritin status following environmental or genetic perturbations. Random mutagenesis was induced and individual mutagenized chromosomes were recovered by classic crossing schemes involving phenotypical markers and balancer chromosomes. In wild type larvae ferritin is predominantly localized in the brain, in regions of the intestine, in wreath cells and in pericardial cells. A pilot genetic screen revealed a mutant fly strain expressing GFP-Ferritin in the anal pads, a pair of organs located ventrally in the posterior end of the fly larvae possibly involved in ion absorption and osmoregulation, which are normally devoid of ferritin. Our continuing genetic screen could reveal transcription factors involved in ferritin regulation and novel proteins important in iron metabolism, hopefully with conserved functions in evolution.