

Table S1

Gene ontology annotation for Y225S mutant

GO terms: DOWNREGULATED	GO terms: UPREGULATED
neurogenesis	proteolysis
mitotic nuclear division	transmembrane transport
DNA replication	oxidation-reduction process
DNA repair	innate immune response
transcription, DNA-templated	response to bacterium
oogenesis	circadian rhythm
DNA replication initiation	hexose transmembrane transport
cellular response to starvation	glucose import
mitotic spindle organization	carbohydrate metabolic process
rRNA processing	response to fungus
protein import into nucleus	transport
mitotic cell cycle	peptide catabolic process

Genes that are downregulated in both Y225S and K23E mutants more then 2 times

Drosophila Entrez Gene ID	Human Entrez Gene ID(s)	Symbol	Description	Maximum expression	Y225S vs wild-type	K23E vs wild-type
251711		CG31517	no data	Ovary	-4.5	-1.7
41254	51548	Sirt6	Histone deacetylase	Ovary	-4.2	-1.5
40217	23028	Su(var)3-3	Histone demethylase	Ovary	-3.8	-2.0
318225		CG32816	no data	Larval trachea	-3.0	-2.0
42183	84154	Non3	rRNA binding activity	Ovary	-2.8	-1.6
317935		CG32243	no data	Ovary	-2.7	-1.9
41994		CG14882	Methionine synthase reductase	Ovary	-2.7	-1.6
2768669	55425	CG33332	no data	Ovary	-2.4	-1.5
42056	24140	CG5220	tRNA methyltransferase	Ovary	-2.3	-1.9

Genes that are upregulated in both Y225S and K23E mutants more then 2 times

Drosophila Entrez Gene ID	Human Entrez Gene ID(s)	Symbol	Description	Maximum expression	Y225S vs wild-type	K23E vs wild-type
43248		CG17192	Phospholipase A(1)	Digestive system	5.4	11.7
43264		CG6074	Carbonic anhydrase	Adult salivary gland	3.8	3.7
43543		Jon99Ciii	Serine protease	Digestive system	3.5	2.2
38240		Cpr62Bb	Cuticular protein	Adult head	3.4	2.3
35498		TpnC4	Troponin C isoform 4	Adult carcass	2.9	2.1
33707		Jon25Bii	Serine protease	Digestive system	2.9	2.6
33708		Jon25Bi	Serine protease	Digestive system	2.9	2.3
33706		Jon25Biii	Serine protease	Digestive system	2.8	2.2
42451		CG4000	no data	Adult head	2.7	2.4
35859	57115	PGRP-SC1a	Peptidoglycan recognition protein	Digestive system	2.6	5.4
38328		CG14949	no data	Digestive system	2.6	2.8
34055		CG7203	Cuticular protein	Adult eye	2.2	2.7
38946		CG17352	no data	Adult eye	2.1	2.0
318098	91445	CG32581	Ubiquitin protein ligase	Adult head	2.1	48.1