

# Role of Rhodopsins as Circadian Photoreceptors in the *Drosophila melanogaster*

Pingkalai R. Senthilan, Rudi Grebler, Nils Reinhard, Dirk Rieger, and Charlotte Helfrich-Förster

To find out *Drosophila* proteins that could be identified by Rh7 antibodies used in Ni et al. [20], and Kistenpfennig et al. [19], we used a BLASTP search (<https://blast.ncbi.nlm.nih.gov/Blast.cgi>) for short input sequences (expect threshold: 200,000, word size: 2, matrix: PAM30, gap costs: existence: 9 extension: 1, no adjustment, taxid: 7227). For the search, we used the epitope sequence aa86 to aa110, for the Kistenpfennig et al. [19] antibody, and the epitope sequence aa1 to aa80, for the Ni et al., [20] antibody. We restricted the search to the first 250 similar protein sequences for both epitopes and looked for common proteins in both searches. We found three proteins: Rh7, Msp300, and CG6424 that could be detected by both antibodies (indicated in red). One should consider that the antibody used in Ni et al., [20] was raised against the GST-fused Rh7 [aa1-aa80] peptide. Taking the entire GST-Rh7 epitope in account, may lead to even less-specific binding sites.

**Table S1.** TOP 250 Proteins that could be detected by the peptide antibody (against aa86-110) used in Kistenpfennig et al. [19]).

Description	Max Score	Total Score	Query Cover	E Value	Ident	Accession
<i>rhodopsin 7 (Drosophila melanogaster)</i>	91.0	105	100%	3e-23	100%	NP_524035.2
ACXC, isoform A ( <i>Drosophila melanogaster</i> )	27.4	41.6	52%	0.51	78%	NP_609593.1
uncharacterized protein Dmel_CG13613 ( <i>Drosophila melanogaster</i> )	26.5	26.5	40%	0.97	39%	NP_001097900.2
BIR repeat containing ubiquitin-conjugating enzyme, isoform C ( <i>Drosophila melanogaster</i> )	26.5	67.5	76%	1.0	69%	NP_001262461.1
BIR repeat containing ubiquitin-conjugating enzyme, isoform E ( <i>Drosophila melanogaster</i> )	26.5	67.5	76%	1.0	69%	NP_001262463.1
BIR repeat containing ubiquitin-conjugating enzyme, isoform D ( <i>Drosophila melanogaster</i> )	26.5	67.5	76%	1.0	69%	NP_001262462.1
BIR repeat containing ubiquitin-conjugating enzyme, isoform A ( <i>Drosophila melanogaster</i> )	26.5	67.5	76%	1.0	69%	NP_649995.2
BIR repeat containing ubiquitin-conjugating enzyme, isoform B ( <i>Drosophila melanogaster</i> )	26.5	67.5	76%	1.0	69%	NP_001262460.1
uncharacterized protein Dmel_CG17109, isoform A ( <i>Drosophila melanogaster</i> )	26.1	49.0	64%	1.4	53%	NP_651122.2
Cyp309a2 ( <i>Drosophila melanogaster</i> )	25.7	25.7	60%	1.9	53%	NP_608689.2
TER94, isoform D ( <i>Drosophila melanogaster</i> )	25.7	25.7	32%	2.0	88%	NP_001097250.1
TER94, isoform A ( <i>Drosophila melanogaster</i> )	25.7	25.7	32%	2.0	88%	NP_477369.1
TER94, isoform E ( <i>Drosophila melanogaster</i> )	25.7	25.7	32%	2.0	88%	NP_001286261.1
TER94, isoform C ( <i>Drosophila melanogaster</i> )	25.7	25.7	32%	2.0	88%	NP_001097249.1
uncharacterized protein Dmel_CG6465 ( <i>Drosophila melanogaster</i> )	24.4	24.4	28%	5.3	86%	NP_650004.1
gustatory receptor 97a, isoform A ( <i>Drosophila melanogaster</i> )	24.4	24.4	28%	5.3	86%	NP_788747.1

<i>gustatory receptor 97a, isoform B (Drosophila melanogaster)</i>	24.4	24.4	28%	5.3	86%	NP_001287551.1
<i>skpA associated protein, isoform G (Drosophila melanogaster)</i>	24.4	24.4	32%	5.3	75%	NP_001189198.2
<i>skpA associated protein, isoform J (Drosophila melanogaster)</i>	24.4	24.4	32%	5.3	75%	NP_001303475.1
<i>skpA associated protein, isoform A (Drosophila melanogaster)</i>	24.4	24.4	32%	5.3	75%	NP_649846.2
<i>skpA associated protein, isoform C (Drosophila melanogaster)</i>	24.4	24.4	32%	5.3	75%	NP_001163558.1
<i>mitochondrial RNA polymerase, isoform A (Drosophila melanogaster)</i>	24.4	35.2	76%	5.4	47%	NP_608565.1
<i>uncharacterized protein Dmel_CG11384 (Drosophila melanogaster)</i>	24.0	49.8	76%	7.5	64%	NP_569887.1
<i>uncharacterized protein Dmel_CG15394, isoform C (Drosophila melanogaster)</i>	23.5	23.5	36%	10	67%	NP_001097062.2
<i>uncharacterized protein Dmel_CG9485, isoform A (Drosophila melanogaster)</i>	23.5	54.1	68%	11	62%	NP_726061.1
<i>uncharacterized protein Dmel_CG9485, isoform C (Drosophila melanogaster)</i>	23.5	54.1	68%	11	62%	NP_611577.2
<i>uncharacterized protein Dmel_CG9485, isoform D (Drosophila melanogaster)</i>	23.5	54.1	68%	11	62%	NP_001163234.1
<i>uncharacterized protein Dmel_CG9485, isoform B (Drosophila melanogaster)</i>	23.5	54.1	68%	11	62%	NP_726062.2
<i>debris buster, isoform G (Drosophila melanogaster)</i>	23.1	23.1	36%	14	70%	NP_001261299.1
<i>transformer 2, isoform E (Drosophila melanogaster)</i>	23.1	23.1	36%	14	67%	NP_476766.1
<i>transformer 2, isoform C (Drosophila melanogaster)</i>	23.1	23.1	36%	14	67%	NP_476765.1
<i>transformer 2, isoform A (Drosophila melanogaster)</i>	23.1	23.1	36%	14	67%	NP_476764.1
<i>taspase 1, isoform A (Drosophila melanogaster)</i>	23.1	23.1	32%	15	75%	NP_648832.1
<i>phosphatase and tensin homolog, isoform C (Drosophila melanogaster)</i>	23.1	36.1	52%	15	53%	NP_477424.1
<i>phosphatase and tensin homolog, isoform A (Drosophila melanogaster)</i>	23.1	36.1	52%	15	53%	NP_599147.1
<i>phosphatase and tensin homolog, isoform B (Drosophila melanogaster)</i>	23.1	36.1	52%	15	53%	NP_477423.1
<i>Smg5, isoform A (Drosophila melanogaster)</i>	23.1	23.1	60%	15	47%	NP_609685.1
<i>wings up A, isoform K (Drosophila melanogaster)</i>	22.7	22.7	52%	20	50%	NP_001259668.1
<i>wings up A, isoform J (Drosophila melanogaster)</i>	22.7	22.7	52%	20	50%	NP_001245734.1
<i>wings up A, isoform A (Drosophila melanogaster)</i>	22.7	22.7	52%	20	50%	NP_728141.1
<i>uncharacterized protein Dmel_CG18327, isoform A (Drosophila melanogaster)</i>	22.7	22.7	32%	20	75%	NP_610934.1
<i>uncharacterized protein Dmel_CG14507 (Drosophila melanogaster)</i>	22.7	22.7	32%	20	78%	NP_001097964.1
<i>uncharacterized protein Dmel_CG6178 (Drosophila melanogaster)</i>	22.7	22.7	24%	20	100%	NP_651221.1
<i>dim gamma-tubulin 3 (Drosophila melanogaster)</i>	22.7	22.7	36%	20	67%	NP_611533.2

<i>uncharacterized protein Dmel_CG9934, isoform A (Drosophila melanogaster)</i>	22.7	35.2	56%	21	67%	NP_609597.1
<i>Muscle-specific protein 300 kDa, isoform B (Drosophila melanogaster)</i>	22.7	113	80%	21	41%	NP_001188692.1
<i>Muscle-specific protein 300 kDa, isoform K (Drosophila melanogaster)</i>	22.7	140	88%	21	41%	NP_001260089.1
<i>Muscle-specific protein 300 kDa, isoform H (Drosophila melanogaster)</i>	22.7	140	88%	21	41%	NP_001188696.1
<i>Muscle-specific protein 300 kDa, isoform I (Drosophila melanogaster)</i>	22.7	140	88%	21	41%	NP_001188697.1
<i>Muscle-specific protein 300 kDa, isoform L (Drosophila melanogaster)</i>	22.7	156	88%	21	41%	NP_001260090.1
<i>Muscle-specific protein 300 kDa, isoform D (Drosophila melanogaster)</i>	22.7	156	88%	21	41%	NP_001188694.1
<i>uncharacterized protein Dmel_CG12123 (Drosophila melanogaster)</i>	22.3	22.3	20%	28	100%	NP_572478.1
<i>gustatory receptor 68a (Drosophila melanogaster)</i>	22.3	22.3	20%	28	100%	NP_524027.2
<i>Cyp9h1 (Drosophila melanogaster)</i>	22.3	22.3	32%	29	75%	NP_610820.1
<i>no-on-and-no-off transient C, isoform A (Drosophila melanogaster)</i>	22.3	33.9	40%	29	100%	NP_727132.1
<i>accessory gland protein 26Aa (Drosophila melanogaster)</i>	21.8	21.8	52%	39	43%	NP_476644.1
<i>suchb, isoform A (Drosophila melanogaster)</i>	21.8	21.8	32%	40	63%	NP_651963.1
<i>Cyp12c1, isoform A (Drosophila melanogaster)</i>	21.8	21.8	24%	40	83%	NP_649052.1
<i>spookier (Drosophila melanogaster)</i>	21.8	21.8	36%	40	78%	NP_001104460.2
<i>uncharacterized protein Dmel_CG17803, isoform A (Drosophila melanogaster)</i>	21.8	36.1	40%	40	56%	NP_650657.2
<i>torn and diminished rhabdomeres, isoform C (Drosophila melanogaster)</i>	21.8	37.3	48%	40	47%	NP_610082.2
<i>torn and diminished rhabdomeres, isoform D (Drosophila melanogaster)</i>	21.8	37.3	48%	40	47%	NP_724308.2
<i>Netrin-B, isoform G (Drosophila melanogaster)</i>	21.8	21.8	28%	40	71%	NP_001259546.1
<i>Netrin-B, isoform A (Drosophila melanogaster)</i>	21.8	21.8	28%	40	71%	NP_511155.1
<i>clathrin heavy chain, isoform A (Drosophila melanogaster)</i>	21.8	93.3	72%	40	47%	NP_477042.1
<i>paralytic, isoform BH (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_001285333.1
<i>paralytic, isoform BD (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_001188651.1
<i>paralytic, isoform AT (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_001188641.1
<i>paralytic, isoform AW (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_001188644.1
<i>paralytic, isoform BB (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_001188649.1
<i>paralytic, isoform AS (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_001188640.1
<i>paralytic, isoform Q (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_001188612.1

<i>paralytic, isoform K (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8606.1
<i>paralytic, isoform R (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8613.1
<i>paralytic, isoform I (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8604.1
<i>paralytic, isoform AM (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8634.1
<i>paralytic, isoform AA (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8622.1
<i>paralytic, isoform AI (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8630.1
<i>paralytic, isoform AD (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8625.1
<i>paralytic, isoform AB (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8623.1
<i>paralytic, isoform L (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8607.1
<i>paralytic, isoform G (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8602.1
<i>paralytic, isoform AQ (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8638.1
<i>paralytic, isoform AG (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8628.1
<i>paralytic, isoform Z (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8621.1
<i>paralytic, isoform O (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8610.1
<i>paralytic, isoform AP (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8637.1
<i>paralytic, isoform V (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8617.1
<i>paralytic, isoform H (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8603.1
<i>paralytic, isoform AX (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8645.1
<i>paralytic, isoform S (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8614.1
<i>paralytic, isoform N (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8609.1
<i>paralytic, isoform M (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8608.1
<i>paralytic, isoform J (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8605.1
<i>paralytic, isoform W (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8618.1
<i>paralytic, isoform AH (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8629.1
<i>paralytic, isoform AE (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8626.1
<i>paralytic, isoform F (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8601.1
<i>paralytic, isoform E (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8600.1
<i>paralytic, isoform AF (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8627.1

<i>paralytic, isoform T (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8615.1
<i>paralytic, isoform AZ (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8647.1
<i>paralytic, isoform AL (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8633.1
<i>paralytic, isoform AO (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8636.1
<i>paralytic, isoform D (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00113 8205.1
<i>uncharacterized protein Dmel_CG9674, isoform A (Drosophila melanogaster)</i>	21.8	36.9	44%	40	62%	NP_64892 2.1
<i>uncharacterized protein Dmel_CG9674, isoform F (Drosophila melanogaster)</i>	21.8	36.9	44%	40	62%	NP_00124 6804.1
<i>paralytic, isoform U (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8616.1
<i>paralytic, isoform P (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8611.1
<i>paralytic, isoform X (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8619.1
<i>paralytic, isoform A (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_52337 1.2
<i>paralytic, isoform C (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00103 6281.1
<i>paralytic, isoform B (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00103 6280.1
<i>paralytic, isoform BA (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8648.1
<i>paralytic, isoform AY (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8646.1
<i>paralytic, isoform AJ (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8631.1
<i>paralytic, isoform Y (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8620.1
<i>paralytic, isoform AN (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00118 8635.1
<i>paralytic, isoform BF (Drosophila melanogaster)</i>	21.8	34.8	96%	40	43%	NP_00125 9619.1
<i>ubiquitin conjugating enzyme 4, isoform A (Drosophila melanogaster)</i>	21.4	21.4	32%	54	63%	NP_52401 0.2
<i>uncharacterized protein Dmel_CG31207 (Drosophila melanogaster)</i>	21.4	53.7	88%	55	55%	NP_73258 1.1
<i>cuticular protein 49Ac, isoform E (Drosophila melanogaster)</i>	21.4	21.4	28%	55	86%	NP_00128 6344.1
<i>cuticular protein 49Ac, isoform A (Drosophila melanogaster)</i>	21.4	21.4	28%	55	86%	NP_61077 2.3
<i>uncharacterized protein Dmel_CG8031 (Drosophila melanogaster)</i>	21.4	21.4	28%	55	86%	NP_65025 2.1
<i>cuticular protein 49Ac, isoform F (Drosophila melanogaster)</i>	21.4	21.4	28%	55	86%	NP_00128 6345.1
<i>cuticular protein 49Ac, isoform C (Drosophila melanogaster)</i>	21.4	21.4	28%	55	86%	NP_72515 0.2
<i>uncharacterized protein Dmel_CG5618, isoform E (Drosophila melanogaster)</i>	21.4	21.4	76%	55	35%	NP_99612 4.1
<i>mitochondrial transcription termination factor 3 (Drosophila melanogaster)</i>	21.4	21.4	28%	55	71%	NP_64924 0.1

<i>rhodopsin 2 (Drosophila melanogaster)</i>	21.4	21.4	40%	55	60%	NP_52439 8.1
<i>Cyp28a5 (Drosophila melanogaster)</i>	21.4	21.4	36%	56	56%	NP_60969 4.1
<i>uncharacterized protein Dmel_CG9784, isoform A (Drosophila melanogaster)</i>	21.4	21.4	80%	56	39%	NP_57313 5.1
<i>uncharacterized protein Dmel_CG5618, isoform A (Drosophila melanogaster)</i>	21.4	21.4	76%	56	35%	NP_64921 1.1
<i>uncharacterized protein Dmel_CG9784, isoform C (Drosophila melanogaster)</i>	21.4	21.4	80%	56	39%	NP_00125 9623.1
<i>amun, isoform C (Drosophila melanogaster)</i>	21.4	21.4	52%	56	53%	NP_57274 1.1
<i>withered, isoform A (Drosophila melanogaster)</i>	21.4	21.4	20%	56	100%	NP_52368 5.2
<i>withered, isoform C (Drosophila melanogaster)</i>	21.4	21.4	20%	56	100%	NP_00116 3111.1
<i>female sterile (1) M3 (Drosophila melanogaster)</i>	21.4	39.0	44%	56	100%	NP_57228 4.4
<i>uncharacterized protein Dmel_CG32163, isoform B (Drosophila melanogaster)</i>	21.0	21.0	52%	68	62%	NP_00128 7083.1
<i>uncharacterized protein Dmel_CG42615 (Drosophila melanogaster)</i>	21.0	21.0	48%	69	56%	NP_00116 3091.1
<i>uncharacterized protein Dmel_CG32163, isoform A (Drosophila melanogaster)</i>	21.0	21.0	52%	74	62%	NP_73018 1.1
<i>uncharacterized protein Dmel_CG44014 (Drosophila melanogaster)</i>	21.0	21.0	60%	76	53%	NP_73204 3.1
<i>cyclin J, isoform B (Drosophila melanogaster)</i>	21.0	31.8	68%	76	43%	NP_99598 9.1
<i>uncharacterized protein Dmel_CG11980, isoform A (Drosophila melanogaster)</i>	21.0	21.0	32%	77	75%	NP_73130 3.2
<i>uncharacterized protein Dmel_CG11980, isoform B (Drosophila melanogaster)</i>	21.0	21.0	32%	77	75%	NP_73130 2.1
<i>uncharacterized protein Dmel_CG11980, isoform C (Drosophila melanogaster)</i>	21.0	21.0	32%	77	75%	NP_64985 7.1
<i>yellow-e2 (Drosophila melanogaster)</i>	21.0	21.0	72%	77	50%	NP_65028 9.2
<i>uncharacterized protein Dmel_CG7639 (Drosophila melanogaster)</i>	21.0	21.0	44%	77	67%	NP_99583 8.1
<i>uncharacterized protein Dmel_CG12910, isoform B (Drosophila melanogaster)</i>	21.0	21.0	20%	78	100%	NP_00126 0857.1
<i>uncharacterized protein Dmel_CG12910, isoform A (Drosophila melanogaster)</i>	21.0	21.0	20%	78	100%	NP_61056 9.1
<i>rasp (Drosophila melanogaster)</i>	21.0	21.0	24%	78	75%	NP_52389 8.1
<i>uncharacterized protein Dmel_CG2145, isoform A (Drosophila melanogaster)</i>	21.0	21.0	36%	78	47%	NP_57266 8.1
<i>reduced ocelli, isoform A (Drosophila melanogaster)</i>	21.0	37.3	56%	78	56%	NP_60986 1.1
<i>reduced ocelli, isoform B (Drosophila melanogaster)</i>	21.0	37.3	56%	78	56%	NP_00128 6024.1
<i>WD repeat domain 33, isoform A (Drosophila melanogaster)</i>	21.0	21.0	24%	78	83%	NP_73098 2.1
<i>uncharacterized protein Dmel_CG31533 (Drosophila melanogaster)</i>	21.0	33.9	52%	78	75%	NP_73188 7.1
<i>RNA polymerase III 128kD subunit (Drosophila melanogaster)</i>	21.0	31.8	60%	78	43%	NP_52370 6.1

<i>CAP-D2 condensin subunit (Drosophila melanogaster)</i>	21.0	21.0	20%	78	100%	NP_65170 9.1
<i>uncharacterized protein Dmel_CG8771, isoform B (Drosophila melanogaster)</i>	21.0	70.2	96%	79	55%	NP_61081 0.2
<i>uncharacterized protein Dmel_CG8771, isoform C (Drosophila melanogaster)</i>	21.0	70.2	96%	79	55%	NP_00124 6283.1
<i>skuld, isoform F (Drosophila melanogaster)</i>	21.0	61.9	76%	79	71%	NP_00126 2134.1
<i>skuld, isoform D (Drosophila melanogaster)</i>	21.0	61.9	76%	79	71%	NP_52465 3.1
<i>skuld, isoform E (Drosophila melanogaster)</i>	21.0	61.9	76%	79	71%	NP_73059 1.2
<i>uncharacterized protein Dmel_CG33690 (Drosophila melanogaster)</i>	20.6	20.6	20%	105	100%	NP_00102 7133.1
<i>synaptotagmin 7, isoform F (Drosophila melanogaster)</i>	20.6	31.4	56%	107	58%	NP_99559 3.2
<i>uncharacterized protein Dmel_CG14830, isoform A (Drosophila melanogaster)</i>	20.6	20.6	32%	107	67%	NP_64809 5.2
<i>synaptotagmin 7, isoform B (Drosophila melanogaster)</i>	20.6	31.4	56%	107	58%	NP_72655 8.2
<i>Ucp4A, isoform A (Drosophila melanogaster)</i>	20.6	20.6	24%	107	83%	NP_57324 6.1
<i>uncharacterized protein Dmel_CG31785 (Drosophila melanogaster)</i>	20.6	36.9	52%	108	35%	NP_72409 3.2
<i>synaptotagmin 7, isoform A (Drosophila melanogaster)</i>	20.6	31.4	56%	108	58%	NP_72655 7.3
<i>uncharacterized protein Dmel_CG3734, isoform A (Drosophila melanogaster)</i>	20.6	35.6	36%	108	100%	NP_65080 2.1
<i>cytochrome P450-4e2, isoform A (Drosophila melanogaster)</i>	20.6	20.6	32%	108	70%	NP_47711 7.2
<i>kinetochore and EB1 associated basic protein, isoform A (Drosophila melanogaster)</i>	20.6	20.6	52%	108	62%	NP_72275 6.1
<i>kinetochore and EB1 associated basic protein, isoform B (Drosophila melanogaster)</i>	20.6	20.6	52%	108	62%	NP_00125 9900.1
<i>uncharacterized protein Dmel_CG2162, isoform E (Drosophila melanogaster)</i>	20.6	20.6	36%	109	50%	NP_00116 3332.2
<i>uncharacterized protein Dmel_CG10483 (Drosophila melanogaster)</i>	20.6	36.9	68%	109	53%	NP_64800 0.1
<i>Threonyl-tRNA synthetase, isoform C (Drosophila melanogaster)</i>	20.6	55.4	56%	109	71%	NP_72372 6.1
<i>Acyl-CoA synthetase long-chain, isoform D (Drosophila melanogaster)</i>	20.6	34.4	64%	109	47%	NP_00101 4512.1
<i>brivido-3, isoform B (Drosophila melanogaster)</i>	20.6	20.6	24%	109	83%	NP_57001 3.3
<i>Threonyl-tRNA synthetase, isoform A (Drosophila melanogaster)</i>	20.6	55.4	56%	109	71%	NP_72372 5.1
<i>brivido-3, isoform C (Drosophila melanogaster)</i>	20.6	20.6	24%	109	83%	NP_00128 4831.1
<i>sirtuin 7 (Drosophila melanogaster)</i>	20.6	34.8	56%	109	70%	NP_65166 4.2
<i>Ecdysone-induced protein 74EF, isoform A (Drosophila melanogaster)</i>	20.6	20.6	20%	109	100%	NP_73028 7.1
<i>Ecdysone-induced protein 74EF, isoform E (Drosophila melanogaster)</i>	20.6	20.6	20%	109	100%	NP_00124 6816.1
<i>Ecdysone-induced protein 74EF, isoform C (Drosophila melanogaster)</i>	20.6	20.6	20%	109	100%	NP_73028 6.3

<i>Ecdysone-induced protein 74EF, isoform B (Drosophila melanogaster)</i>	20.6	33.1	40%	109	100%	NP_73028 8.1
<i>spineless, isoform A (Drosophila melanogaster)</i>	20.6	20.6	52%	109	54%	NP_47674 8.1
<i>uncharacterized protein Dmel_CG42335 (Drosophila melanogaster)</i>	20.6	20.6	76%	109	48%	NP_73265 5.3
<i>uncharacterized protein Dmel_CG31445, isoform A (Drosophila melanogaster)</i>	20.6	31.4	44%	109	67%	NP_65168 9.1
<i>uncharacterized protein Dmel_CG2111 (Drosophila melanogaster)</i>	20.6	48.2	64%	109	67%	NP_57264 4.1
<i>spineless, isoform C (Drosophila melanogaster)</i>	20.6	20.6	52%	109	54%	NP_00124 7140.1
<i>uncharacterized protein Dmel_CG33158 (Drosophila melanogaster)</i>	20.6	33.1	24%	109	67%	NP_78851 5.1
<i>histone gene-specific epigenetic repressor in late S phase, isoform H (Drosophila melanogaster)</i>	20.6	20.6	40%	109	47%	NP_00124 5774.1
<i>pyruvate carboxylase, isoform E (Drosophila melanogaster)</i>	20.6	20.6	32%	109	75%	NP_61052 7.1
<i>pyruvate carboxylase, isoform I (Drosophila melanogaster)</i>	20.6	20.6	32%	109	75%	NP_72484 1.1
<i>histone gene-specific epigenetic repressor in late S phase, isoform C (Drosophila melanogaster)</i>	20.6	20.6	40%	109	47%	NP_72830 9.1
<i>histone gene-specific epigenetic repressor in late S phase, isoform D (Drosophila melanogaster)</i>	20.6	35.2	56%	109	47%	NP_00103 3855.1
<i>defective transmitter release (Drosophila melanogaster)</i>	20.6	43.5	32%	109	100%	NP_72433 5.2
<i>molting defective, isoform F (Drosophila melanogaster)</i>	20.6	35.2	24%	110	83%	NP_00124 7288.1
<i>molting defective, isoform A (Drosophila melanogaster)</i>	20.6	35.2	24%	110	83%	NP_00103 6754.1
<i>molting defective, isoform E (Drosophila melanogaster)</i>	20.6	35.2	24%	110	83%	NP_65127 3.2
<i>molting defective, isoform D (Drosophila melanogaster)</i>	20.6	35.2	24%	110	83%	NP_00124 7289.1
<i>histone gene-specific epigenetic repressor in late S phase, isoform A (Drosophila melanogaster)</i>	20.6	31.4	40%	110	47%	NP_60836 0.2
<i>Unc-89, isoform G (Drosophila melanogaster)</i>	20.6	49.0	56%	110	83%	NP_00128 6805.1
<i>uninflatable, isoform B (Drosophila melanogaster)</i>	20.6	76.2	72%	110	71%	NP_00113 7804.1
<i>uninflatable, isoform C (Drosophila melanogaster)</i>	20.6	76.2	72%	110	71%	NP_00116 2899.1
<i>Unc-89, isoform H (Drosophila melanogaster)</i>	20.6	63.2	64%	110	83%	NP_00128 6806.1
<i>Unc-89, isoform F (Drosophila melanogaster)</i>	20.6	49.0	56%	110	83%	NP_00128 6804.1
<i>Unc-89, isoform E (Drosophila melanogaster)</i>	20.6	63.2	64%	110	83%	NP_00128 6803.1
<i>Unc-89, isoform D (Drosophila melanogaster)</i>	20.6	63.2	64%	110	83%	NP_00101 4545.3
<i>Unc-89, isoform C (Drosophila melanogaster)</i>	20.6	63.2	64%	110	83%	NP_00109 7440.1
<i>male fertility factor kl3 (Drosophila melanogaster)</i>	20.6	126	76%	110	53%	NP_00110 4482.3
<i>Ran, isoform A (Drosophila melanogaster)</i>	20.2	20.2	56%	147	50%	NP_65196 9.1



<i>glutathione S transferase E1 (Drosophila melanogaster)</i>	20.2	20.2	32%	148	67%	NP_61132 3.1
<i>uncharacterized protein Dmel_CG17744 (Drosophila melanogaster)</i>	20.2	31.0	56%	148	64%	NP_64807 0.1
<i>uncharacterized protein Dmel_CG15880 (Drosophila melanogaster)</i>	20.2	20.2	24%	149	55%	NP_60854 7.2
<i>mei-217 (Drosophila melanogaster)</i>	20.2	20.2	20%	149	100%	NP_00102 7069.3
<i>GlcAT-P, isoform C (Drosophila melanogaster)</i>	20.2	35.2	56%	149	47%	NP_00101 4581.1
<i>uncharacterized protein Dmel_CG6048 (Drosophila melanogaster)</i>	20.2	20.2	36%	150	62%	NP_57228 2.1
<i>uncharacterized protein Dmel_CG5955 (Drosophila melanogaster)</i>	20.2	20.2	28%	150	58%	NP_64923 0.1
<i>gustatory receptor 39a, isoform B (Drosophila melanogaster)</i>	20.2	31.8	24%	150	100%	NP_72432 9.1
<i>uncharacterized protein Dmel_CG17110, isoform A (Drosophila melanogaster)</i>	20.2	20.2	28%	150	71%	NP_65112 1.1
<i>uncharacterized protein Dmel_CG5316, isoform E (Drosophila melanogaster)</i>	20.2	20.2	24%	150	83%	NP_00124 7195.2
<i>uncharacterized protein Dmel_CG2129 (Drosophila melanogaster)</i>	20.2	20.2	32%	151	67%	NP_57244 9.1
<i>uncharacterized protein Dmel_CG18472 (Drosophila melanogaster)</i>	20.2	20.2	24%	151	75%	NP_65151 4.1
<i>GlcAT-P, isoform A (Drosophila melanogaster)</i>	20.2	51.1	56%	151	47%	NP_64844 8.1
<i>uncharacterized protein Dmel_CG18095, isoform A (Drosophila melanogaster)</i>	20.2	31.8	44%	151	64%	NP_60969 7.2
<i>sensory neuron membrane protein 1, isoform A (Drosophila melanogaster)</i>	20.2	31.0	48%	151	100%	NP_65095 3.1
<i>uncharacterized protein Dmel_CG18095, isoform B (Drosophila melanogaster)</i>	20.2	46.0	44%	151	64%	NP_00118 8805.1
<i>uncharacterized protein Dmel_CG5316, isoform B (Drosophila melanogaster)</i>	20.2	20.2	24%	151	83%	NP_65080 5.1
<i>TBC1 domain family member 16 (Drosophila melanogaster)</i>	20.2	20.2	28%	151	71%	NP_60940 3.2
<i>uncharacterized protein Dmel_CG16854, isoform B (Drosophila melanogaster)</i>	20.2	20.2	36%	151	70%	NP_00124 5974.1
<i>Na(+)/H(+) hydrogen antiporter 1, isoform B (Drosophila melanogaster)</i>	20.2	31.8	52%	151	71%	NP_60908 0.1
<i>Na(+)/H(+) hydrogen antiporter 1, isoform A (Drosophila melanogaster)</i>	20.2	31.8	52%	151	71%	NP_72322 4.2
<i>mediator complex subunit 15 (Drosophila melanogaster)</i>	20.2	20.2	40%	152	58%	NP_60852 8.1
<i>uncharacterized protein Dmel_CG6424, isoform A (Drosophila melanogaster)</i>	20.2	31.4	28%	152	58%	NP_72570 9.1
<i>gemini, isoform A (Drosophila melanogaster)</i>	20.2	49.0	76%	152	33%	NP_72489 5.1
<i>gemini, isoform C (Drosophila melanogaster)</i>	20.2	49.0	76%	152	33%	NP_61055 6.1
<i>stall, isoform C (Drosophila melanogaster)</i>	20.2	20.2	20%	152	100%	NP_00109 7423.1
<i>uncharacterized protein Dmel_CG4329 (Drosophila melanogaster)</i>	20.2	32.7	56%	152	70%	NP_61168 7.1
<i>Kinesin-like protein at 98A, isoform B (Drosophila melanogaster)</i>	20.2	36.1	44%	152	83%	NP_00124 7339.1

<i>Kinesin-like protein at 98A, isoform A (Drosophila melanogaster)</i>	20.2	50.3	60%	152	83%	NP_52453 2.2
<i>integrator 6, isoform A (Drosophila melanogaster)</i>	20.2	34.8	36%	152	100%	NP_57225 3.2
<i>cacophony, isoform M (Drosophila melanogaster)</i>	20.2	32.2	60%	153	56%	NP_00124 5637.1
<i>cacophony, isoform B (Drosophila melanogaster)</i>	20.2	32.2	60%	153	56%	NP_99642 0.1
<i>cacophony, isoform D (Drosophila melanogaster)</i>	20.2	32.2	60%	153	56%	NP_99641 8.1
<i>cacophony, isoform C (Drosophila melanogaster)</i>	20.2	32.2	60%	153	56%	NP_99641 9.1
<i>cacophony, isoform A (Drosophila melanogaster)</i>	20.2	32.2	60%	153	56%	NP_51113 3.2
<i>cacophony, isoform H (Drosophila melanogaster)</i>	20.2	32.2	60%	153	56%	NP_00101 4734.1
<i>cacophony, isoform G (Drosophila melanogaster)</i>	20.2	32.2	60%	153	56%	NP_00101 4735.1
<i>cacophony, isoform I (Drosophila melanogaster)</i>	20.2	32.2	60%	153	56%	NP_00101 4733.1

**Table S2.** TOP 250 Proteins that could be detected by the antibody (against aa1-80) used in Ni et al., [20].

<b>Description</b>	<b>Max Score</b>	<b>Total Score</b>	<b>Query Cover</b>	<b>E Value</b>	<b>Ident</b>	<b>Accession</b>
<i>rhodopsin 7 (Drosophila melanogaster)</i>	247	247	100%	3e-74	100%	NP_52403 5.2
<i>activating transcription factor 3, isoform A (Drosophila melanogaster)</i>	33.3	107	53%	0.071	67%	NP_62047 3.1
<i>activating transcription factor 3, isoform B (Drosophila melanogaster)</i>	33.3	107	53%	0.072	67%	NP_00125 9125.1
<i>SAM-motif ubiquitously expressed punctatedly localized protein, isoform D (Drosophila melanogaster)</i>	32.0	308	30%	0.18	47%	NP_00128 5828.1
<i>SAM-motif ubiquitously expressed punctatedly localized protein, isoform A (Drosophila melanogaster)</i>	32.0	368	46%	0.18	47%	NP_52510 1.2
<i>uncharacterized protein Dmel_CG13946 (Drosophila melanogaster)</i>	31.6	31.6	28%	0.19	57%	NP_65236 0.1
<i>uncharacterized protein Dmel_CG14650 (Drosophila melanogaster)</i>	31.2	73.8	51%	0.33	58%	NP_64947 3.1
<i>uncharacterized protein Dmel_CG5756, isoform C (Drosophila melanogaster)</i>	31.2	192	63%	0.33	75%	NP_61129 2.2
<i>protein phosphatase 2C, isoform A (Drosophila melanogaster)</i>	30.8	175	38%	0.45	54%	NP_52507 4.2
<i>connectin, isoform A (Drosophila melanogaster)</i>	29.9	75.1	56%	0.81	43%	NP_52393 0.3
<i>stranded at second, isoform A (Drosophila melanogaster)</i>	29.9	219	68%	0.83	54%	NP_47661 1.1
<i>stranded at second, isoform B (Drosophila melanogaster)</i>	29.9	238	68%	0.83	54%	NP_73114 1.1
<i>uncharacterized protein Dmel_CG18304, isoform C (Drosophila melanogaster)</i>	29.9	162	70%	0.83	77%	NP_00126 0169.1
<i>uncharacterized protein Dmel_CG18304, isoform B (Drosophila melanogaster)</i>	29.9	162	70%	0.83	77%	NP_00124 5921.1
<i>uncharacterized protein Dmel_CG18304, isoform A (Drosophila melanogaster)</i>	29.9	162	70%	0.83	77%	NP_60908 3.2

<i>uncharacterized protein Dmel_CG18304, isoform D (Drosophila melanogaster)</i>	29.9	162	70%	0.83	77%	NP_00126 0170.1
<i>multiple ankyrin repeats single KH domain, isoform F (Drosophila melanogaster)</i>	29.9	355	80%	0.84	62%	NP_00128 7500.1
<i>multiple ankyrin repeats single KH domain, isoform D (Drosophila melanogaster)</i>	29.9	355	80%	0.84	62%	NP_00126 2903.1
<i>multiple ankyrin repeats single KH domain, isoform E (Drosophila melanogaster)</i>	29.9	516	83%	0.84	62%	NP_00126 2904.1
<i>multiple ankyrin repeats single KH domain, isoform A (Drosophila melanogaster)</i>	29.9	516	83%	0.84	62%	NP_78873 3.1
<i>multiple ankyrin repeats single KH domain, isoform C (Drosophila melanogaster)</i>	29.9	516	83%	0.84	62%	NP_00124 7280.1
<i>uncharacterized protein Dmel_CG34426 (Drosophila melanogaster)</i>	29.5	93.1	77%	1.1	45%	NP_00109 7552.1
<i>pointed, isoform C (Drosophila melanogaster)</i>	29.5	151	62%	1.1	67%	NP_73285 8.1
<i>pointed, isoform E (Drosophila melanogaster)</i>	29.5	151	62%	1.1	67%	NP_00126 2872.1
<i>hormone receptor 4, isoform C (Drosophila melanogaster)</i>	29.5	311	53%	1.1	52%	NP_00103 3823.1
<i>hormone receptor 4, isoform D (Drosophila melanogaster)</i>	29.5	311	53%	1.1	52%	NP_00125 9159.1
<i>hormone receptor 4, isoform F (Drosophila melanogaster)</i>	29.5	311	53%	1.1	52%	NP_00125 9157.1
<i>hormone receptor 4, isoform E (Drosophila melanogaster)</i>	29.5	335	53%	1.1	52%	NP_00125 9158.1
<i>hormone receptor 4, isoform J (Drosophila melanogaster)</i>	29.5	335	53%	1.1	52%	NP_00125 9162.1
<i>hormone receptor 4, isoform H (Drosophila melanogaster)</i>	29.5	381	65%	1.1	52%	NP_00125 9160.1
<i>hormone receptor 4, isoform G (Drosophila melanogaster)</i>	29.5	335	53%	1.1	52%	NP_00125 9156.1
<i>hormone receptor 4, isoform I (Drosophila melanogaster)</i>	29.5	448	66%	1.1	52%	NP_00125 9161.1
<i>Muscle-specific protein 300 kDa, isoform B (Drosophila melanogaster)</i>	29.5	497	87%	1.1	50%	NP_00118 8692.1
<i>Muscle-specific protein 300 kDa, isoform L (Drosophila melanogaster)</i>	29.5	735	91%	1.1	50%	NP_00126 0090.1
<i>Muscle-specific protein 300 kDa, isoform D (Drosophila melanogaster)</i>	29.5	748	91%	1.1	50%	NP_00118 8694.1
<i>uncharacterized protein Dmel_CG13075 (Drosophila melanogaster)</i>	29.1	174	31%	1.4	56%	NP_64883 1.1
<i>uncharacterized protein Dmel_CG44838, isoform G (Drosophila melanogaster)</i>	29.1	171	51%	1.5	52%	NP_64832 1.2
<i>uncharacterized protein Dmel_CG44838, isoform I (Drosophila melanogaster)</i>	29.1	205	65%	1.5	52%	NP_00128 7006.1
<i>uncharacterized protein Dmel_CG43867, isoform I (Drosophila melanogaster)</i>	29.1	221	61%	1.5	45%	NP_00125 9105.1
<i>uncharacterized protein Dmel_CG43867, isoform L (Drosophila melanogaster)</i>	29.1	218	61%	1.5	45%	NP_47738 9.4
<i>uncharacterized protein Dmel_CG43867, isoform F (Drosophila melanogaster)</i>	29.1	235	61%	1.5	45%	NP_00109 6861.1
<i>uncharacterized protein Dmel_CG43867, isoform H (Drosophila melanogaster)</i>	29.1	291	82%	1.5	45%	NP_00125 9106.1
<i>uncharacterized protein Dmel_CG43867, isoform B (Drosophila melanogaster)</i>	29.1	237	67%	1.5	45%	NP_00125 9108.1

<i>uncharacterized protein Dmel_CG43867, isoform A (Drosophila melanogaster)</i>	29.1	254	67%	1.5	45%	NP_00125 9109.1
<i>uncharacterized protein Dmel_CG43867, isoform D (Drosophila melanogaster)</i>	29.1	321	82%	1.5	45%	NP_00109 6860.2
<i>uncharacterized protein Dmel_CG43867, isoform C (Drosophila melanogaster)</i>	29.1	251	67%	1.5	45%	NP_00125 9104.1
<i>uncharacterized protein Dmel_CG43867, isoform K (Drosophila melanogaster)</i>	29.1	268	67%	1.5	45%	NP_00128 4762.1
<i>mucin related 29B (Drosophila melanogaster)</i>	28.6	435	60%	2.0	37%	NP_72337 7.1
<i>acinus, isoform A (Drosophila melanogaster)</i>	28.6	56.6	31%	2.0	63%	NP_60993 5.1
<i>uncharacterized protein Dmel_CG12506 (Drosophila melanogaster)</i>	28.2	28.2	28%	2.3	52%	NP_60854 1.1
<i>uncharacterized protein Dmel_CG34273 (Drosophila melanogaster)</i>	28.2	113	30%	2.4	57%	NP_00109 7790.1
<i>la costa (Drosophila melanogaster)</i>	28.2	85.7	23%	2.4	63%	NP_52343 6.1
<i>uncharacterized protein Dmel_CG13560, isoform A (Drosophila melanogaster)</i>	28.2	196	27%	2.5	60%	NP_61182 3.2
<i>uncharacterized protein Dmel_CG10911 (Drosophila melanogaster)</i>	28.2	236	77%	2.7	48%	NP_61128 6.1
<i>protein kinase, cAMP-dependent, catalytic subunit 3, isoform A (Drosophila melanogaster)</i>	28.2	57.5	47%	2.7	39%	NP_52409 7.2
<i>protein kinase, cAMP-dependent, catalytic subunit 3, isoform B (Drosophila melanogaster)</i>	28.2	70.8	47%	2.7	39%	NP_73008 3.2
<i>RNA-binding protein 9, isoform J (Drosophila melanogaster)</i>	28.2	155	38%	2.7	52%	NP_00125 9974.1
<i>uncharacterized protein Dmel_CG15725 (Drosophila melanogaster)</i>	28.2	170	48%	2.7	43%	NP_57282 3.1
<i>stubble, isoform A (Drosophila melanogaster)</i>	28.2	105	35%	2.7	64%	NP_47670 9.1
<i>wacky, isoform C (Drosophila melanogaster)</i>	28.2	158	50%	2.8	50%	NP_00109 7008.2
<i>wacky, isoform A (Drosophila melanogaster)</i>	28.2	158	50%	2.8	50%	NP_57318 7.2
<i>wacky, isoform E (Drosophila melanogaster)</i>	28.2	158	50%	2.8	50%	NP_00125 9635.1
<i>wacky, isoform G (Drosophila melanogaster)</i>	28.2	158	50%	2.8	50%	NP_00125 9637.1
<i>wacky, isoform F (Drosophila melanogaster)</i>	28.2	173	50%	2.8	50%	NP_00125 9636.1
<i>meiotic P26, isoform A (Drosophila melanogaster)</i>	28.2	91.0	76%	2.8	30%	NP_65202 2.1
<i>meiotic P26, isoform C (Drosophila melanogaster)</i>	28.2	91.0	76%	2.8	30%	NP_00125 9377.1
<i>uncharacterized protein Dmel_CG15570 (Drosophila melanogaster)</i>	28.2	355	67%	2.8	59%	NP_57215 4.1
<i>fat facets, isoform C (Drosophila melanogaster)</i>	28.2	181	58%	2.8	48%	NP_73345 5.1
<i>fat facets, isoform E (Drosophila melanogaster)</i>	28.2	181	58%	2.8	48%	NP_00124 7388.1
<i>fat facets, isoform D (Drosophila melanogaster)</i>	28.2	219	58%	2.8	48%	NP_00124 7387.1
<i>fat facets, isoform A (Drosophila melanogaster)</i>	28.2	219	58%	2.8	48%	NP_52461 2.2

<i>Ptx1, isoform A (Drosophila melanogaster)</i>	27.8	116	53%	3.7	54%	NP_73341 0.2
<i>Ptx1, isoform C (Drosophila melanogaster)</i>	27.8	116	53%	3.7	54%	NP_99631 4.1
<i>Ptx1, isoform E (Drosophila melanogaster)</i>	27.8	133	53%	3.7	54%	NP_00113 8130.2
<i>mucin 68D (Drosophila melanogaster)</i>	27.8	1274	78%	3.8	43%	NP_64850 4.2
<i>uncharacterized protein Dmel_CG17839, isoform B (Drosophila melanogaster)</i>	27.8	206	50%	3.8	41%	NP_99608 5.2
<i>mucin related 89F, isoform C (Drosophila melanogaster)</i>	27.8	851	77%	3.8	67%	NP_65061 1.2
<i>mucin related 89F, isoform B (Drosophila melanogaster)</i>	27.8	851	77%	3.8	67%	NP_00126 2662.1
<i>papilin, isoform C (Drosophila melanogaster)</i>	27.8	511	90%	3.8	48%	NP_00116 3760.1
<i>papilin, isoform F (Drosophila melanogaster)</i>	27.8	525	90%	3.8	48%	NP_78875 1.2
<i>papilin, isoform G (Drosophila melanogaster)</i>	27.8	511	90%	3.8	48%	NP_00116 3761.1
<i>papilin, isoform E (Drosophila melanogaster)</i>	27.8	525	90%	3.8	48%	NP_78875 2.2
<i>HECT and RLD domain containing protein 2 (Drosophila melanogaster)</i>	27.8	429	76%	3.8	49%	NP_60838 8.2
<i>Sox21a, isoform A (Drosophila melanogaster)</i>	27.4	59.6	31%	4.9	56%	NP_64869 4.1
<i>Sox21a, isoform B (Drosophila melanogaster)</i>	27.4	59.6	31%	4.9	56%	NP_00126 1827.1
<i>head involution defective, isoform A (Drosophila melanogaster)</i>	27.4	140	47%	4.9	50%	NP_52413 6.2
<i>Usf, isoform B (Drosophila melanogaster)</i>	27.4	233	66%	4.9	50%	NP_57216 7.3
<i>CIN85 and CD2AP related, isoform B (Drosophila melanogaster)</i>	27.4	185	53%	5.0	67%	NP_65182 7.1
<i>CIN85 and CD2AP related, isoform A (Drosophila melanogaster)</i>	27.4	185	53%	5.0	67%	NP_73340 6.1
<i>CIN85 and CD2AP related, isoform D (Drosophila melanogaster)</i>	27.4	188	53%	5.0	67%	NP_73340 7.2
<i>uncharacterized protein Dmel_CG9003, isoform B (Drosophila melanogaster)</i>	27.4	84.2	50%	5.0	47%	NP_00109 7271.1
<i>CIN85 and CD2AP related, isoform F (Drosophila melanogaster)</i>	27.4	188	53%	5.0	67%	NP_00126 3125.1
<i>CIN85 and CD2AP related, isoform G (Drosophila melanogaster)</i>	27.4	188	53%	5.0	67%	NP_00126 3126.1
<i>uncharacterized protein Dmel_CG17264, isoform A (Drosophila melanogaster)</i>	27.4	123	87%	5.0	34%	NP_60873 6.2
<i>CIN85 and CD2AP related, isoform E (Drosophila melanogaster)</i>	27.4	229	61%	5.0	67%	NP_00126 3124.1
<i>CIN85 and CD2AP related, isoform C (Drosophila melanogaster)</i>	27.4	229	61%	5.0	67%	NP_73340 5.2
<i>CIN85 and CD2AP related, isoform J (Drosophila melanogaster)</i>	27.4	229	61%	5.1	67%	NP_00126 3129.1
<i>hira (Drosophila melanogaster)</i>	27.4	154	32%	5.1	54%	NP_57240 1.2
<i>hairless, isoform B (Drosophila melanogaster)</i>	27.4	196	73%	5.1	44%	NP_73253 5.1

<i>hairless, isoform A (Drosophila melanogaster)</i>	27.4	196	73%	5.1	44%	NP_73253 3.1
<i>stardust, isoform I (Drosophila melanogaster)</i>	27.4	73.0	35%	5.1	44%	NP_57246 4.4
<i>stardust, isoform B (Drosophila melanogaster)</i>	27.4	104	35%	5.1	44%	NP_57246 3.1
<i>stardust, isoform E (Drosophila melanogaster)</i>	27.4	104	35%	5.1	44%	NP_99637 6.1
<i>stardust, isoform J (Drosophila melanogaster)</i>	27.4	110	35%	5.1	44%	NP_00124 5574.1
<i>rolling pebbles, isoform H (Drosophila melanogaster)</i>	27.4	111	53%	5.1	43%	NP_00126 1738.1
<i>rolling pebbles, isoform D (Drosophila melanogaster)</i>	27.4	111	53%	5.1	43%	NP_64854 2.1
<i>stardust, isoform O (Drosophila melanogaster)</i>	27.4	142	35%	5.1	44%	NP_00128 5010.1
<i>rolling pebbles, isoform F (Drosophila melanogaster)</i>	27.4	111	53%	5.1	43%	NP_00126 1736.1
<i>rolling pebbles, isoform C (Drosophila melanogaster)</i>	27.4	111	53%	5.1	43%	NP_72978 0.1
<i>rolling pebbles, isoform I (Drosophila melanogaster)</i>	27.4	141	63%	5.1	43%	NP_00126 1739.1
<i>rolling pebbles, isoform G (Drosophila melanogaster)</i>	27.4	141	63%	5.1	43%	NP_00126 1737.1
<i>rolling pebbles, isoform B (Drosophila melanogaster)</i>	27.4	141	63%	5.1	43%	NP_72977 8.1
<i>stardust, isoform M (Drosophila melanogaster)</i>	27.4	304	40%	5.1	44%	NP_00125 9326.1
<i>stardust, isoform L (Drosophila melanogaster)</i>	27.4	291	40%	5.1	44%	NP_00124 5576.1
<i>stardust, isoform G (Drosophila melanogaster)</i>	27.4	323	40%	5.1	44%	NP_00103 3835.2
<i>mucin 68Ca (Drosophila melanogaster)</i>	27.4	2448	66%	5.1	54%	NP_99605 4.1
<i>uncharacterized protein Dmel_CG32188 (Drosophila melanogaster)</i>	26.9	91.8	40%	5.7	45%	NP_73030 8.1
<i>uncharacterized protein Dmel_CG13054 (Drosophila melanogaster)</i>	26.9	52.4	31%	6.6	48%	NP_64885 2.1
<i>uncharacterized protein Dmel_CG6294, isoform B (Drosophila melanogaster)</i>	26.9	42.4	35%	6.7	50%	NP_57302 6.1
<i>ubiquitin specific protease 2, isoform H (Drosophila melanogaster)</i>	26.9	105	25%	6.7	54%	NP_00128 5527.1
<i>uncharacterized protein Dmel_CG13676, isoform B (Drosophila melanogaster)</i>	26.9	56.6	23%	6.8	58%	NP_00126 1560.1
<i>ubiquitin specific protease 2, isoform A (Drosophila melanogaster)</i>	26.9	121	32%	6.8	54%	NP_60846 2.1
<i>uncharacterized protein Dmel_CG13676, isoform A (Drosophila melanogaster)</i>	26.9	72.1	28%	6.8	58%	NP_64817 9.3
<i>F-box protein 11, isoform A (Drosophila melanogaster)</i>	26.9	275	57%	6.9	50%	NP_64995 4.1
<i>uncharacterized protein Dmel_CG43658, isoform D (Drosophila melanogaster)</i>	26.9	126	50%	6.9	61%	NP_00116 2780.2
<i>uncharacterized protein Dmel_CG43658, isoform C (Drosophila melanogaster)</i>	26.9	219	78%	6.9	61%	NP_00125 9643.1
<i>rhinoceros, isoform B (Drosophila melanogaster)</i>	26.9	371	92%	6.9	36%	NP_99594 4.1

<i>uncharacterized protein Dmel_CG14452 (Drosophila melanogaster)</i>	26.5	94.6	28%	7.9	61%	NP_64940 7.1
<i>uncharacterized protein Dmel_CG10918 (Drosophila melanogaster)</i>	26.5	183	31%	8.5	48%	NP_60845 3.1
<i>bunched, isoform C (Drosophila melanogaster)</i>	26.5	42.8	25%	8.5	75%	NP_72375 6.1
<i>bunched, isoform O (Drosophila melanogaster)</i>	26.5	57.5	25%	8.5	75%	NP_00126 0419.1
<i>bunched, isoform B (Drosophila melanogaster)</i>	26.5	42.8	25%	8.6	75%	NP_00116 2965.1
<i>bunched, isoform D (Drosophila melanogaster)</i>	26.5	55.8	25%	8.7	75%	NP_00116 2964.1
<i>bunched, isoform E (Drosophila melanogaster)</i>	26.5	42.8	25%	8.7	75%	NP_00103 6358.1
<i>uncharacterized protein Dmel_CG31324, isoform A (Drosophila melanogaster)</i>	26.5	47.5	37%	8.8	47%	NP_73313 8.1
<i>lemming B, isoform A (Drosophila melanogaster)</i>	26.5	148	50%	9.0	46%	NP_00109 7124.1
<i>uncharacterized protein Dmel_CG14223, isoform A (Drosophila melanogaster)</i>	26.5	109	43%	9.1	71%	NP_60834 1.1
<i>uncharacterized protein Dmel_CG46026 (Drosophila melanogaster)</i>	26.5	880	38%	9.2	56%	NP_00130 3496.1
<i>uncharacterized protein Dmel_CG10151, isoform A (Drosophila melanogaster)</i>	26.5	117	43%	9.2	71%	NP_72541 4.1
<i>uncharacterized protein Dmel_CG10151, isoform D (Drosophila melanogaster)</i>	26.5	117	43%	9.2	71%	NP_00113 7670.1
<i>simjang, isoform C (Drosophila melanogaster)</i>	26.5	142	51%	9.3	41%	NP_64840 7.1
<i>simjang, isoform A (Drosophila melanogaster)</i>	26.5	142	51%	9.3	41%	NP_72962 4.1
<i>simjang, isoform D (Drosophila melanogaster)</i>	26.5	157	55%	9.3	41%	NP_00126 1684.1
<i>simjang, isoform E (Drosophila melanogaster)</i>	26.5	142	51%	9.3	41%	NP_00126 1685.1
<i>bunched, isoform F (Drosophila melanogaster)</i>	26.5	190	46%	9.3	75%	NP_00103 6359.1
<i>bunched, isoform P (Drosophila melanogaster)</i>	26.5	173	46%	9.3	75%	NP_00128 5875.1
<i>bunched, isoform A (Drosophila melanogaster)</i>	26.5	204	46%	9.3	75%	NP_52510 3.2
<i>bunched, isoform G (Drosophila melanogaster)</i>	26.5	204	46%	9.3	75%	NP_00103 6357.2
<i>sickie, isoform K (Drosophila melanogaster)</i>	26.5	177	68%	9.3	45%	NP_00126 0608.1
<i>sickie, isoform M (Drosophila melanogaster)</i>	26.5	205	68%	9.4	45%	NP_00126 0610.1
<i>sickie, isoform D (Drosophila melanogaster)</i>	26.5	220	70%	9.4	45%	NP_00109 7183.1
<i>sickie, isoform N (Drosophila melanogaster)</i>	26.5	205	68%	9.4	45%	NP_99573 0.2
<i>sickie, isoform H (Drosophila melanogaster)</i>	26.5	220	68%	9.4	45%	NP_00126 0603.1
<i>sickie, isoform B (Drosophila melanogaster)</i>	26.5	205	68%	9.4	45%	NP_99572 9.2
<i>sickie, isoform L (Drosophila melanogaster)</i>	26.5	205	68%	9.4	45%	NP_00126 0609.1

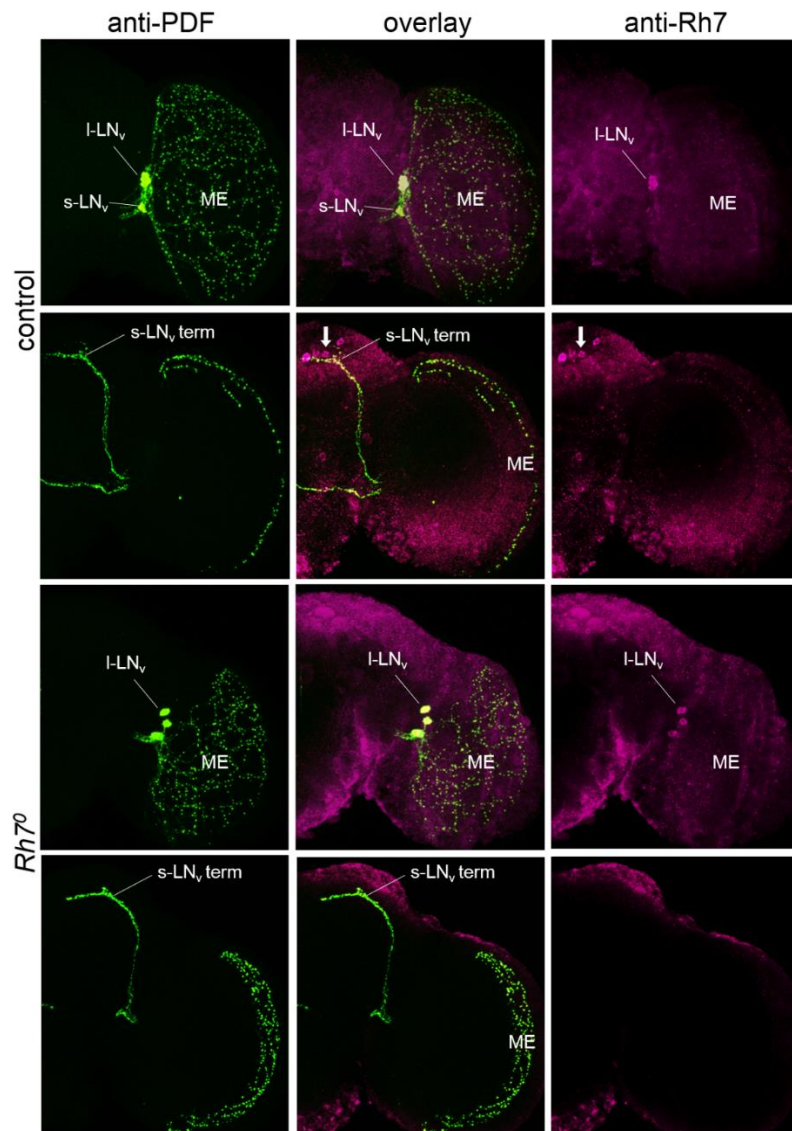
<i>megator, isoform A (Drosophila melanogaster)</i>	26.5	258	65%	9.4	63%	NP_47706 7.2
<i>sickie, isoform I (Drosophila melanogaster)</i>	26.5	299	68%	9.4	45%	NP_00126 0606.1
<i>uncharacterized protein Dmel_CG14454, isoform A (Drosophila melanogaster)</i>	26.1	92.9	28%	11	61%	NP_64940 4.1
<i>uncharacterized protein Dmel_CG12522 (Drosophila melanogaster)</i>	26.1	93.1	41%	11	47%	NP_64843 8.1
<i>new glue 3 (Drosophila melanogaster)</i>	26.1	133	28%	11	56%	NP_52506 0.1
<i>grain, isoform A (Drosophila melanogaster)</i>	26.1	149	72%	12	50%	NP_73121 1.1
<i>runt, isoform B (Drosophila melanogaster)</i>	26.1	73.0	40%	12	47%	NP_00124 5786.1
<i>runt, isoform A (Drosophila melanogaster)</i>	26.1	73.0	40%	12	47%	NP_52342 4.2
<i>invected, isoform B (Drosophila melanogaster)</i>	26.1	96.7	66%	12	35%	NP_52369 9.3
<i>grain, isoform B (Drosophila melanogaster)</i>	26.1	249	71%	12	50%	NP_00113 8026.1
<i>uncharacterized protein Dmel_CG9518, isoform A (Drosophila melanogaster)</i>	26.1	56.6	67%	12	36%	NP_57297 9.1
<i>skeletor, isoform D (Drosophila melanogaster)</i>	26.1	26.1	21%	12	65%	NP_00102 7173.2
<i>grain, isoform C (Drosophila melanogaster)</i>	26.1	249	71%	12	50%	NP_00126 2366.1
<i>uncharacterized protein Dmel_CG15473 (Drosophila melanogaster)</i>	26.1	90.6	38%	12	45%	NP_57217 9.1
<i>uncharacterized protein Dmel_CG15322, isoform B (Drosophila melanogaster)</i>	26.1	161	33%	12	74%	NP_60837 1.2
<i>protein tyrosine phosphatase 99A, isoform G (Drosophila melanogaster)</i>	26.1	53.2	31%	13	50%	NP_00118 9309.1
<i>scribbler, isoform C (Drosophila melanogaster)</i>	26.1	318	55%	13	45%	NP_99588 4.1
<i>scribbler, isoform F (Drosophila melanogaster)</i>	26.1	334	55%	13	45%	NP_99588 3.1
<i>ubiquitin protein ligase E3A (Drosophila melanogaster)</i>	26.1	90.6	51%	13	52%	NP_64845 2.1
<i>pou domain motif 3, isoform A (Drosophila melanogaster)</i>	26.1	159	38%	13	43%	NP_61037 7.1
<i>pico, isoform B (Drosophila melanogaster)</i>	26.1	162	40%	13	59%	NP_72830 7.1
<i>mediator complex subunit 1, isoform B (Drosophila melanogaster)</i>	26.1	235	55%	13	41%	NP_00118 9153.1
<i>pico, isoform C (Drosophila melanogaster)</i>	26.1	205	52%	13	59%	NP_00118 8674.1
<i>uncharacterized protein Dmel_CG8176, isoform A (Drosophila melanogaster)</i>	26.1	189	55%	13	50%	NP_78861 2.1
<i>mediator complex subunit 1, isoform C (Drosophila melanogaster)</i>	26.1	270	55%	13	41%	NP_00126 2183.1
<i>uncharacterized protein Dmel_CG8176, isoform G (Drosophila melanogaster)</i>	26.1	142	48%	13	50%	NP_00126 2419.1
<i>pico, isoform A (Drosophila melanogaster)</i>	26.1	205	52%	13	59%	NP_60836 3.1
<i>uncharacterized protein Dmel_CG8176, isoform C (Drosophila melanogaster)</i>	26.1	189	55%	13	50%	NP_00109 7723.1



<i>uncharacterized protein Dmel_CG4835 (Drosophila melanogaster)</i>	26.1	462	48%	13	48%	NP_64796 5.3
<i>protein tyrosine phosphatase 99A, isoform A (Drosophila melanogaster)</i>	26.1	76.8	50%	13	50%	NP_73328 8.1
<i>protein tyrosine phosphatase 99A, isoform C (Drosophila melanogaster)</i>	26.1	76.8	50%	13	50%	NP_99630 2.1
<i>thin, isoform D (Drosophila melanogaster)</i>	26.1	301	52%	13	63%	NP_00128 6596.1
<i>pou domain motif 3, isoform E (Drosophila melanogaster)</i>	26.1	290	43%	13	43%	NP_00128 6193.1
<i>thin, isoform E (Drosophila melanogaster)</i>	26.1	321	52%	13	63%	NP_00128 6597.1
<i>pou domain motif 3, isoform C (Drosophila melanogaster)</i>	26.1	290	43%	13	43%	NP_00113 7617.2
<i>pou domain motif 3, isoform F (Drosophila melanogaster)</i>	26.1	290	43%	13	43%	NP_00118 8885.2
<i>protein tyrosine phosphatase 99A, isoform B (Drosophila melanogaster)</i>	26.1	90.1	50%	13	50%	NP_47681 6.1
<i>thin, isoform A (Drosophila melanogaster)</i>	26.1	301	52%	13	63%	NP_61139 0.2
<i>protein tyrosine phosphatase 99A, isoform F (Drosophila melanogaster)</i>	26.1	58.3	47%	13	50%	NP_65169 1.4
<i>mediator complex subunit 1, isoform A (Drosophila melanogaster)</i>	26.1	401	75%	13	41%	NP_64934 1.1
<i>skeletor, isoform E (Drosophila melanogaster)</i>	26.1	42.0	27%	13	65%	NP_00124 7027.1
<i>thin, isoform C (Drosophila melanogaster)</i>	26.1	316	52%	13	63%	NP_00113 7707.1
<i>protein 1 of cleavage and polyadenylation factor 1, isoform E (Drosophila melanogaster)</i>	26.1	235	43%	13	43%	NP_00118 8931.1
<i>protein 1 of cleavage and polyadenylation factor 1, isoform F (Drosophila melanogaster)</i>	26.1	236	46%	13	43%	NP_00128 6428.1
<i>protein 1 of cleavage and polyadenylation factor 1, isoform G (Drosophila melanogaster)</i>	26.1	235	43%	13	43%	NP_00128 6429.1
<i>protein 1 of cleavage and polyadenylation factor 1, isoform D (Drosophila melanogaster)</i>	26.1	235	43%	13	43%	NP_61099 9.4
<i>uncharacterized protein Dmel_CG9932, isoform E (Drosophila melanogaster)</i>	26.1	328	48%	13	61%	NP_00126 0429.1
<i>uncharacterized protein Dmel_CG9932, isoform A (Drosophila melanogaster)</i>	26.1	328	48%	13	61%	NP_60959 9.1
<i>scribbler, isoform D (Drosophila melanogaster)</i>	26.1	382	60%	13	45%	NP_00116 3189.1
<i>scribbler, isoform G (Drosophila melanogaster)</i>	26.1	397	60%	13	45%	NP_00116 3191.1
<i>scribbler, isoform J (Drosophila melanogaster)</i>	26.1	397	60%	13	45%	NP_00126 1074.1
<i>uncharacterized protein Dmel_CG7656, isoform A (Drosophila melanogaster)</i>	25.7	45.0	32%	16	52%	NP_73005 9.1
<i>uncharacterized protein Dmel_CG7656, isoform D (Drosophila melanogaster)</i>	25.7	45.0	32%	16	52%	NP_73005 8.2
<i>pangolin, isoform Q (Drosophila melanogaster)</i>	25.7	25.7	20%	17	63%	NP_00124 5405.1
<i>mucin 4B, isoform B (Drosophila melanogaster)</i>	25.7	355	65%	17	63%	NP_72691 5.2
<i>RNA-binding protein 6, isoform B (Drosophila melanogaster)</i>	25.7	116	46%	17	57%	NP_00109 7631.1

<i>Sp1, isoform D (Drosophila melanogaster)</i>	25.7	151	38%	17	57%	NP_00109 6927.2
<i>Sp1, isoform E (Drosophila melanogaster)</i>	25.7	151	38%	17	57%	NP_57257 9.3
<i>Sp1, isoform F (Drosophila melanogaster)</i>	25.7	151	38%	17	57%	NP_00125 9388.1
<i>uncharacterized protein Dmel_CG6424, isoform A (Drosophila melanogaster)</i>	25.7	90.6	45%	17	61%	NP_72570 9.1
<i>uncharacterized protein Dmel_CG13643, isoform E (Drosophila melanogaster)</i>	25.7	114	30%	17	62%	NP_00126 2938.1
<i>uncharacterized protein Dmel_CG13643, isoform B (Drosophila melanogaster)</i>	25.7	114	30%	17	62%	NP_65225 3.1
<i>uncharacterized protein Dmel_CG13643, isoform D (Drosophila melanogaster)</i>	25.7	114	30%	17	62%	NP_00126 2937.1
<i>kin of irre, isoform A (Drosophila melanogaster)</i>	25.7	89.3	57%	17	50%	NP_72684 4.1
<i>uncharacterized protein Dmel_CG43736, isoform G (Drosophila melanogaster)</i>	25.7	120	41%	17	41%	NP_00125 9297.1
<i>uncharacterized protein Dmel_CG43736, isoform F (Drosophila melanogaster)</i>	25.7	170	57%	17	41%	NP_00125 9296.1
<i>tripeptidyl-peptidase II, isoform A (Drosophila melanogaster)</i>	25.7	95.5	57%	17	52%	NP_47724 7.1
<i>tripeptidyl-peptidase II, isoform E (Drosophila melanogaster)</i>	25.7	95.5	57%	17	52%	NP_00128 6377.1
<i>tripeptidyl-peptidase II, isoform D (Drosophila melanogaster)</i>	25.7	95.5	57%	17	52%	NP_72525 2.1
<i>pacman, isoform A (Drosophila melanogaster)</i>	25.7	75.9	38%	17	71%	NP_52340 8.2
<i>pacman, isoform B (Drosophila melanogaster)</i>	25.7	75.9	38%	17	71%	NP_00116 2796.1
<i>Myocardin-related transcription factor, isoform H (Drosophila melanogaster)</i>	25.7	163	91%	17	55%	NP_00113 7879.3
<i>hangover, isoform A (Drosophila melanogaster)</i>	25.7	196	40%	17	90%	NP_72798 0.2
<i>hangover, isoform D (Drosophila melanogaster)</i>	25.7	214	45%	17	90%	NP_72797 9.3
<i>hangover, isoform C (Drosophila melanogaster)</i>	25.7	281	71%	17	90%	NP_00113 8204.1
<i>toutatis, isoform A (Drosophila melanogaster)</i>	25.7	314	77%	17	52%	NP_52370 1.3
<i>toutatis, isoform F (Drosophila melanogaster)</i>	25.7	314	77%	17	52%	NP_00126 0898.1
<i>toutatis, isoform G (Drosophila melanogaster)</i>	25.7	314	77%	17	52%	NP_00126 0899.1
<i>toutatis, isoform E (Drosophila melanogaster)</i>	25.7	314	77%	17	52%	NP_00109 7270.1
<i>uncharacterized protein Dmel_CG11122 (Drosophila melanogaster)</i>	25.7	343	52%	17	65%	NP_57268 5.2
<i>huntingtin, isoform A (Drosophila melanogaster)</i>	25.7	276	63%	17	45%	NP_65162 9.1
<i>dumpy, isoform J (Drosophila melanogaster)</i>	25.7	1466	57%	17	50%	NP_00124 5876.1
<i>dumpy, isoform I (Drosophila melanogaster)</i>	25.7	1466	57%	17	50%	NP_00124 5875.1
<i>dumpy, isoform S (Drosophila melanogaster)</i>	25.7	252	55%	17	50%	NP_00126 0034.1

<i>dumpy, isoform AA (Drosophila melanogaster)</i>	25.7	1523	57%	17	50%	NP_001260042.1
<i>dumpy, isoform V (Drosophila melanogaster)</i>	25.7	1509	45%	17	50%	NP_001260037.1
<i>dumpy, isoform P (Drosophila melanogaster)</i>	25.7	1538	57%	17	50%	NP_001260031.1
<i>dumpy, isoform U (Drosophila melanogaster)</i>	25.7	1552	57%	17	50%	NP_001260036.1
<i>dumpy, isoform T (Drosophila melanogaster)</i>	25.7	1552	57%	17	50%	NP_001260035.1
<i>dumpy, isoform R (Drosophila melanogaster)</i>	25.7	1552	57%	17	50%	NP_001260033.1
<i>dumpy, isoform Q (Drosophila melanogaster)</i>	25.7	1552	57%	17	50%	NP_001260032.1
<i>uncharacterized protein Dmel_CG13947 (Drosophila melanogaster)</i>	25.2	67.2	23%	20	64%	NP_608542.1
<i>uncharacterized protein Dmel_CG42525, isoform B (Drosophila melanogaster)</i>	25.2	247	57%	22	49%	NP_001261361.1
<i>uncharacterized protein Dmel_CG42525, isoform A (Drosophila melanogaster)</i>	25.2	282	67%	22	37%	NP_001163335.1
<i>ELL-associated factor, isoform B (Drosophila melanogaster)</i>	25.2	85.5	75%	22	36%	NP_724550.1



**Figure S1.** PDF and Rh7 labelling in the right brain hemispheres of a control fly and an *Rh7<sup>0</sup>* mutant. For each fly, the upper row shows the overlay of thirty anterior confocal sections (2µm thick) and the lower row shows thirty posterior sections. Rh7-labeling is present in the large PDF neurons (1-LN<sub>v</sub>) of the control and the *Rh7<sup>0</sup>* fly. In the control fly, Rh7-labeling is additionally present in the neurons (white arrows), in the dorsal brain close to the terminals of the small PDF neurons (s-LN<sub>v</sub> term). ME medulla.