**Supplementary File 1. Experimental genotypes**

| Figure | Panel | Genotype | °C |
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| **1** | A-B | *w1118* | 25 |
| **2** | A-C, F-I | *sqhAx3/w;; sqh-GFP* | 25 |
| D-E | *sqhAx3/w; UAS-Pax-GFP/+; da****-****Gal4/sqh-mCh* | 25 |
| **2 – S1** | A | w/*y w hsFLP/+;; UAS-Ftractin-Tom/act5c>>Gal4* | 25 |
| B | *y w/y w hsFLP;; UAS-Lifeact-GFP/+; act5c>>Gal4/+* | 25 |
| C | *w/y w hsFLP;; UAS-Moe-ABD-mCh/ act5c>>Gal4* | 25 |
| D | *w/y w hsFLP; UAS-Utr-ABD-GFP/+; act5c>>Gal4/+* | 25 |
| **2 – S2** | A-B | *sqhAx3/w;; sqh-GFP* | 25 |
| **3** | A | *w/y\* w\*; tj-Gal4/UAS-Pax-GFP* | 25 |
| B, E-G | *w; Pax-GFP* | 25 |
| C | *w;;Talin-GFP* | 25 |
| D | *w mys-GFP* | 25 |
| **3 – S1** | - | *w; Pax-GFP* | 25 |
| **4** | A-E | *sqhAx3/w; UAS-Pax-GFP/+; da-Gal4/sqh-mCh* | 25 |
| **5** | A left | *w; Pax-GFP/+; sqh-mCh/+* | 25 |
| A middle, B | *w; Pax-GFP/+; sqh-mCh/+* | 25 |
| A right, C | *w/y w; tj-Gal4/Pax-GFP; sqh-mCh/UAS-Abi RNAiNIG: 9749R-3* | 25 |
| D | *y sc\* v sev/y w hsFLP; UAS-Pax-GFP/ +; UAS-Sra1 RNAiTRiP.HMS01754/act5c>>Gal4* | 25 |
| E | *y sc\* v sev/y w hsFLP; act5c>>Gal4, UAS-RFP/+; UAS-Sra1 RNAiTRiP.HMS01754/sqh-mCh* | 25 |
| **6** | A, D | *w/y w hsFLP;; UAS-Abi RNAiNIG: 9749R-3/act5c>>Gal4, UAS-RFP* | 25 |
| B, D | *w/y w hsFLP; UAS-DAAM RNAiKK102786/+; act5c>>Gal4, UAS-RFP/+* | 25 |
| C, D | *w/y w hsFLP;; UAS-pTWFlag-C-DAAM/+; act5c>>Gal4, UAS-RFP/+* | 29 (2d) |
| D | *hsFLP Ubi-mRFP-nls FRT19A/DAAMA FRT19A* | 25 |
| D | *hsFLP Ubi-mRFP-nls FRT19A/DAAMEx68 FRT19A* | 25 |
| E | *hsFLP* *Ubi-mRFP-nls FRT19A/DAAMA FRT19A* | 25 |
| **6 – S1** | A, C | *y sc\* v sev/y w hsFLP;; UAS-Sra1 RNAiTRiP.HMS01754/act5c>>Gal4, UAS-RFP* | 25 |
| B, C | *w/y w hsFLP; UAS-Ena RNAiGD8910/+; act5c>>Gal4, UAS-RFP/+* | 25 |
| D | *w/y w hsFLP; UAS-RNAi /+; act5c>>Gal4, UAS-RFP/+*  *or w/y w hsFLP;; UAS-RNAi/act5c>>Gal4, UAS-RFP*  *(exact RNAi lines used are noted in figure)* | 29 (2d) |
| E | *Ubi-mRFP-nls FRT19A/DAAMA FRT19A; tj-Gal4, UAS-Flp/ UAS-RNAi or*  *Ubi-mRFP-nls FRT19A/DAAMA FRT19A; tj-Gal4, UAS-Flp/+; UAS-RNAi/+*  *(exact RNAi lines used are noted in figure)* | 25 |
| **7** | A, B | *DAAM-GFP/w1118* | 25 |
| C | *DAAMEx68 FRT19A/hsFLP Ubi-mRFP-nls FRT19A* | 25 |
| D | *DAAMA FRT19A/hsFLP Ubi-mRFP-nls FRT19A; tj-Gal4/+* | 25 |
| E control | *w/y w; Cyo/UAS-DAAM RNAiKK102786; sqh-mCh/+* | 25 |
| E experimental | *w/y w; tj-Gal4/UAS-DAAM-DAAM RNAiKK102786; sqh-mCh/+* | 25 |
| F depletion | *w/y w hsFLP; UAS-DAAM RNAiKK102786; TalinGFP/act5c>>Gal4, UAS-RFP* | 29 (2d) |
| F overexpression | *w/y w hsFLP; UAS-pTWFlag-C-DAAM/+; TalinGFP/act5c>>Gal4, UAS-RFP* | 25 |
| G control | *w/y w; tj-Gal4/+; UAS-Dcr2/+* | 25 |
| G experimental | *w/y w; tj-Gal4; UAS-Dcr2/UAS-DAAM RNAiKK102786* | 25 |
| **8** | A | *DAAM-GFP/w1118* | 25 |
| B | *DAAMA FRT19A/hsFLP Ubi-mRFP-nls FRT19A*  *and DAAMEx68 FRT19A/hsFLP Ubi-mRFP-nls FRT19A* | 25 |
| C | *w/y w hsFLP; +; UAS-Dia RNAiGD9442/act5c>>Gal4, UAS-nls-RFP* | 25 |
| D | *(same as the four genotypes listed in 8E below)* | 29 (2d) |
| E left | *w1118; Cy2-Gal4/+* | 29 (2d) |
| E left middle | *w1118; Cy2-Gal4/UAS-DAAM RNAiKK102786* | 29 (2d) |
| E right middle | *w1118; Cy2-Gal4/+; UAS-Dia RNAiKK101745* | 29 (2d) |
| E right | *w1118; Cy2-Gal4/+; UAS-Dia RNAiGD9442* | 29 (2d) |
| **Videos** | 1, 2 | *sqhAx3/w;; sqh-GFP* | 25 |
| 3, 4 | *sqhAx3/w; UAS-Pax-GFP/+; da-Gal4/sqh-mCh* | 25 |
| 5 | *w; Pax-GFP/+; sqh-mCh/+* | 25 |