Supplementary file 3. Stocks used in this study.

Fly stock	References	Figure
w^{1118}; R27H08-LexA (attP40); *5XUAS-DSCP-E86tetLC** (pJFRC34, attP2), *13xlexAop2-IVS-dTrpA1-WPRE*** (JFRC 26, VK0005)	*(Shirangi, Stern, and Truman 2013) **(Mann, Gordon, and Scott 2013)**	**Figure 4B**
*13XLexAop2-IVS-myr-tdTomato*** (pJFRC48, attP18); R27H08-LexA (attP40); *10XUAS-IVS-myr::GFP** (pJFRC12, su(Hw)attP1)	*(Pfeiffer et al. 2010) **(Asahina et al. 2014)	**Figure 5A-D**, **Figure 4 - supplement 2A**,**B**, **Figure 5 - supplement 2A-D**
*13XLexAop2-IVS-myr-tdTomato*** (pJFRC48, attP18); *10XUAS-IVS-myr::GFP** (pJFRC12, su(Hw)attP5); R26B12-LexA (attP2)	*(Pfeiffer et al. 2010) **(Asahina et al. 2014)	**Figure 5E-G**, **Figure 4 - supplement 2C**,**D**, **Figure 5 - supplement 2E-G**
*13XLexAop2-IVS-myr-tdTomato*** (pJFRC48, attP18); *10XUAS-IVS-myr::GFP** (pJFRC12, su(Hw)attP5); R18C11-LexA (attP2)	*(Pfeiffer et al. 2010) **(Asahina et al. 2014)	**Figure 5H**, **Figure 4 - supplement 2E**,**F**, **Figure 5 - supplement 2H**
w^{1118}; R34C03-AD (attP40); *10XUAS-IVS-mCD8::GFP**/TM6b (pJFRC2, su(Hw) attP2)	*(Pfeiffer et al. 2010)	**Figure 2H**
w^{1118}; *10XUAS-IVS-mCD8::GFP* (pJFRC2, attP2)	(Pfeiffer et al. 2010)	**Figure 1C-F**, **Figure 2C-F,H**, **Figure 3A-D**, **Figure 1 - supplement 1B-J**, **Figure 1 - supplement 2A-E'**, **Figure 2 - supplement 1B-H**, **Figure 2 - supplement 2A-I**, **Figure 4 - supplement 1B-D**
w^{1118}; *UAS-dTrpA1* (attP16)	(Hamada et al. 2008)	**Figure 1A-B**, **Figure 2A-B**
w^{1118}; ;*UAS-Kir2.1-GFP*	(Baines et al. 2001)	**Figure 4E** (data not shown)
w^{1118}; *UAS-TeTxLC.TNT*	(Sweeney et al. 1995)	**Figure 4E** **Figure 4 - supplement 3A-C**
20XUAS-CsChrimson-mVenus (attP18)	(Klapoetke et al. 2014)	**Figure 7C-D**, **Figure 6 - supplement 2**, **Figure 6 - supplement 3**, **Figure 7 - supplement 1A**,**B**

*13XLexAop2-CsChrimson-mVenus** (attP18); R24C08-AD (attP40); R26B12-DBD (attP2)	*(Klapoetke et al. 2014)	**Figure 6B**
*13XLexAop2-CsChrimson-mVenus** (attP18); R18C11-AD/CyO (attP40); R71D01-DBD (attp2)	*(Klapoetke et al. 2014)	**Figure 6C**
*13XLexAop2-CsChrimson-mVenus** (attP18); R11B11-AD (attP40); R34C03-DBD (attP2)	*(Klapoetke et al. 2014)	**Figure 6A**
*13XLexAop2-CsChrimson-mVenus** (attP18); R76F12-AD (attP40); R18C11-DBD (attP2)	*(Klapoetke et al. 2014)	**Figure 6D**
*20XUAS-CsChrimson-mVenus** (attP18); *13XLexAop2-IVS-p10-GCaMP6s*** (pGP-JFRC59, su(Hw)attP5); R26B12-LexA/TM6b (attP2)	*(Klapoetke et al. 2014) **(Chen et al. 2013)	**Figure 6F**
w^{1118}; *20XUAS-IVS-GCaMP6s** (pGP-JFRC7) (attP40); R26B12-LexA/TM6b (attP2)	*(Chen et al. 2013)	**Figure 6G-I**
w^{1118}; R27H08-LexA (attP40); *20XUAS-IVS-GCaMP6s**(pGP-JFRC7, VK0005)	*(Chen et al. 2013)	**Figure 6A-D**
20XUAS-CsChrimson-mVenus** (attP18); *13XLexAop2-IVS-p10-GCaMP6s** (pGB-JFRC59, su(Hw)attP5); R18C11-LexA	*(Chen et al. 2013) **(Klapoetke et al. 2014)	**Figure 6E**
w^{1118}; pBDPLexAp65U* (attP40); *20XUAS-IVS-GCaMP6s*** (pGP-JFRC7, VK0005)	*(Pfeiffer et al. 2010) **(Chen et al. 2013)	**Figure 4 - supplement 1A**
w^{1118}; ; pBPGAL4U (attP2)	(Pfeiffer et al. 2010)	**Figure 4B**,**E** **Figure 1 - supplement 1A**,**E**, **Figure 2 - supplement 1A**, **Figure 4 - supplement 3A-C**
w^{1118}; pBPp65ADZpUw* (attP40) ; pBPZpGAL4DBDUw* (attP2)	*(Pfeiffer et al. 2010)	**Figure 1A-B**, **Figure 2A-B**, **Figure 4B**,**E**, **Figure 1 - supplement 1F**, **Figure 5 - supplement 1E**, **Figure 6 - supplement 3** (bottom 2 rows), **Figure 7 - supplement 1A**,**B**
w^{1118}; *lexAop-CD4::spGFP11**, R27H08-LexA/CyO (attP40); *UAS-CD4::spGFP1-10**	*(Gordon and Scott 2009)	**Figure 5 - supplement 1A-H**

pBPhsFlp2::PEST in attP3;; HA_V5_FLAG (MCFO-1)	(Nern, Pfeiffer, and Rubin 2015)	**Figure 1 - supplement 4 B-H**

*/** Asterisks indicate the transgene associated with the corresponding reference in the second column.

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