

Movie S1: The F1 generation of $y[1] w[1118]; PBac[y[+mDint2] w[+mC]=UAS-ChR2.XXL]VK00018$ and the pan-glial driver $w[1118]; P\{w[+m*]=GAL4\}repo/TM3,Sb$ produced $Glia>ChR2XXL$. The adults of 2 to 3 days post-pupation were fed ATR for 24 h and then anesthetized with CO₂ and placed in Petri dishes. 50% of the F1 generation will express ChR2XXL, so after the blue LED light was exposed to the flies, the non-responders were removed. Some started to move after about a minute and others took from 6 to 10 min to move again. Beginning as embryos, the line was maintained in the dark until adults were fed ATR and later transferred to the glass dish. The video was sped up two times. Recordings were made with IR light along with the blue light exposure (<https://youtu.be/kW-OBXn8Kcs>).

Movie S2: The F1 generation using the GFP-marked balancer line TM3, $P\{w[+mC]=ActGFP\}JMR2$, Ser was not sensitive to blue light, whereas the non- GFP animals were paralyzed upon exposure to blue light due to ChR2XXL being expressed in the glia ($Glia>ChR2XXL$). The adults of 2 to 3 days post-pupation were fed ATR for 24 h. Beginning as embryos, the line was maintained in the dark until adults were fed ATR and later transferred to the plast vials. Recordings were made with IR light along with blue light exposure (<https://youtu.be/CKzx3T8BGps>).

Movie S3: The F1 generation of UAS-TRPA1 was crossed with the pan-glial driver $w[1118]; P\{w[+m*]=GAL4\}repo/TM3,Sb$ producing the $Glia>TRPA1$ line. The adults of 2 to 3 days post-pupation were used for examining the behavioral effects the heat produced. The glass dish was moved from a normal range of 21 to 22 °C to a hot plate with a temperature of 28 to 29 °C. 50% of the F1 generation expressed TRPA1. The responders, when exposed to heat, fell on their sides and back quickly. Upon removal from the heat, the adults slowly recovered, which took as long as 30 min. All the responders were able to recover and move around the dish. The recording is shown at four times the normal speed (<https://youtu.be/D1QG9Dw2mK0>).

Movie S4: Larvae expressing channel rhodopsin in the $Glia>Chr2\ XXL$ line when exposed to blue LED light for 10 s were paralyzed. 50% of the F1 generation expressed ChR2XXL. The larvae were initially viewed under IR light and exposed to 10 s of blue light. The larvae that responded to blue light slowly recovered their ability to move, while the non-responders did not show any behavioral alterations to the blue light. The first part of the video was shown at four times the normal speed. The later parts in the video were shown at normal speed to illustrate the effect of the blue light and the behavior during the recovery period (<https://youtu.be/DlbGcWa1Xq0>).

Movie S5: Larvae in F1 generation using the GFP-marked balancer line TM3, $P\{w[+mC]=ActGFP\}JMR2$. Ser were shown not to be sensitive to blue light, whereas the non-GFP expressing animals upon exposure to blue light due to ChR2XXL were being expressed in the glia ($Glia>ChR2XXL$). The GFP expressing lines were removed based on visual identification. Recordings were made with IR light along with the blue light exposures. (<https://youtu.be/WcKCB-QFrDQ>)

Movie S6: Larvae expressing the temperature sensitive TRPA1 channel in the $Glia>TRPA1$ line and the parental line UAS-TRPA1 were exposed to heat. The glass dishes were moved from 21 to 22 °C to a hot plate of 28 to 29 °C. 50% of the $Glia>TRPA1$ line express TRPA1. The responders when exposed to heat curl and then become flaccid and paralyzed. The non-responders of the $Glia>TRPA1$ line behaved the same as the parental line UAS-TRPA1. The video was shown at four times the normal speed. It took about 30 min for all the larvae to start moving again. The non-responders were able to keep moving the entire time during the heat exposure, as well as during the 30 min during which the responders were paralyzed (https://youtu.be/2uK_zJIKmAY).