**Supplementary Table S1: Transgenic strain list**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **DNA on array** | **Strain name** | **Transgene name** | | **Strain background** | **Expressing neurons** |
| ***eat-4fosmid::sl2::yfp****, pha-1(pBX)* | OH12312 | *otIs388* | | *pha-1(e2123)III; him-5(e1490)V* | M5, I2, MI, M3, OLL, OLQ, IL1, URY, BAG, RIA, AFD, ASK, ADL, AIB, AWC, ASE, ASG, ASH, AUA, RIM, AIZ, AIM, I5, AQR, FLP, ADA, RIG, AVM, ALM, PVD, DVC, PHB, LUA, PQR, PHC, PVR, PLM, PHA, PVQ  Additionally, in male: PCA, PVV, HOA, R2B, R5A, R6B, R9A, CP-0,-5,-6,-7, PVN |
| ***eat-4fosmid::sl2::cherry****, pha-1(pBX)* | OH13645 | *otIs518* | | *pha-1(e2123)III; him-5(e1490)V* | M5, I2, MI, M3, OLL, OLQ, IL1, URY, BAG, RIA, AFD, ASK, ADL, AIB, AWC, ASE, ASG, ASH, AUA, RIM, AIZ, AIM, I5, AQR, FLP, ADA, RIG, AVM, ALM, PVD, DVC, PHB, LUA, PQR, PHC, PVR, PLM, PHA, PVQ  Additionally, in male: PCA, PVV, HOA, R2B, R5A, R6B, R9A, CP-0,-5,-6,-7, PVN |
| ***eat-4prom1::gfp****, unc-122::gfp* | OH15423, OH15424 | *otEx7198, otEx7199* | | *OH13645 [otIs518(eat-4fosmid::sl2::cherry); him-5(e1490)V]* | ASK, ASH, AUA, FLP, ADA, AVM, ALM, PVD, LUA, PVR, PLM  Additionally, in male: PVV, R2B, R5A, R6B, R9A, CP-0,-5,-6 |
| ***eat-4prom2::gfp****, unc-122::gfp* | OH15414, OH15415 | *otEx7190, otEx7191* | | *OH13645 [otIs518(eat-4fosmid::sl2::cherry);him-5(e1490)V]* | ASK, AIB, ASH, AUA, FLP, ADA, AVM, ALM, PVD, LUA, PVR, PLM  Additionally, in male: PVV, R5A, R6B, R9A, CP-0,-5,-6 |
| ***eat-4prom26::gfp****, rol-6(pRF4)* | OH11778, OH11779, OH11780 | *otEx5345, otEx5346, otEx5347* | | N2 | ASK, AIB, ASH, AUA, FLP, ADA, AVM, ALM, PVD, PQR, PVR, PLM  Additionally, in male: PVV, R2B, R5A, R6B, R9A, PVN |
| ***eat-4prom27::gfp****, rol-6(pRF4)* | OH11283, OH11284, OH11285 | *otEx5098, otEx5099, otEx5100* | | N2 | ASK, AIB, ASH, I5, ADA, LUA, PQR, PVR  Additionally, in male: R5A, R6B, R9A |
| ***eat-4prom211::gfp****, rol-6(pRF4)* | OH11710, OH11711 | *otEx5316, otEx5317* | | N2 | ASK, ADL, AIB, ASG, ASH, AUA, FLP, ADA, ALM, PVD, LUA, PVR, PLM  Additionally, in male: PVV, R2A, R6B, R9A |
| ***eat-4prom212::gfp****, unc-122::gfp* | OH15418, OH15419 | *otEx7194, otEx7195* | | *OH13645*  *[otIs518(eat-4fos::sl2::cherry);*  *him-5(e1490)V]* | ADL, AIB, ASG, AUA, FLP, ADA, ALM, PVD, LUA, PVR, PLM  Additionally, in male: PVV, R2B, R5A, R9A |
| ***eat-4prom4::gfp****, ttx-3::tagrfp* | Strain not available | | | N2 | No expression detected |
| ***eat-4prom5::gfp****, ttx-3::tagrfp* | OH11655, OH11656, OH11657 | *otEx5292, otEx5293, otEx5294* | | N2 | I2, OLQ, IL1, URY, RIA, ASH, AUA, RIM, AIM, RIG, DVC, PHB, PHC, PVQ  Additionally, in male: PCA, PVV, HOA, R2B, CP7 |
| ***eat-4prom6::gfp****, ttx-3::tagrfp* | OH15847 | *otIs362* | | N2 | BAG, AFD, AWC, ASE, ASG |
| ***eat-4prom7::gfp****, ttx-3::tagrfp* | OH12262 | *otIs487* | | N2 | M5, MI, M3, I5 |
| ***eat-4prom71::gfp****, ttx-3::tagrfp* | Strain not available | | | N2 | MI, M3, I5 |
| ***eat-4prom72::gfp****, ttx-3::tagrfp* | Strain not available | | | N2 | M5, MI, M3, I5 |
| ***eat-4prom73::gfp****, ttx-3::tagrfp* | Strain not available | | | N2 | M3, I5 |
| ***eat-4prom74::gfp****, ttx-3::tagrfp* | Strain not available | | | N2 | M5, M3, I5 |
| ***eat-4prom8::gfp****, ttx-3::gfp* | OH12525 | *otIs521* | | N2 | OLL, OLQ, RIA  Additionally, in male: PCA, HOA |
| ***eat-4prom9::gfp****, pha-1(pBX)* | OH11992 | *otIs461* | | *pha-1(e2123)III* | LUA, PVR |
| ***eat-4prom10::gfp****, rol-6(pRF4)* | OH11691 | *otEx5310* | | *N2* | M3, ASK, ASG, AUA, I5, ALM, PVD, LUA, PQR, PVR, PLM |
| ***eat-4prom11::gfp****, ttx-3::tagrfp* | OH14018 | *otIs520* | | *him-5(e1490)V* | AIM, PHC |
| ***eat-4prom12::gfp****, ttx-3::tagrfp* | OH12793 | *otIs557* | | N2 | OLL, OLQ |
| ***eat-4prom13::gfp****, ttx-3::tagrfp* | OH12794 | *otEx5878* | | N2 | ASH, RIM, PVR  Additionally, in male: PVV |
| ***eat-4prom14::gfp****, ttx-3::tagrfp* | OH12797 | *otIs558* | | N2 | I2, IL1, RIM, PVQ  Additionally, in male: PCA, HOA, R2B, CP7 |
| ***eat-4prom15::gfp****, ttx-3::tagrfp* | OH12639,  OH12640 | *otEx5763, otEx5764* | | N2 | MI, I5 |
|  | | | | |  |
| ***unc-17prom1::tagrfp****, pha-1(pBX)* | OH15043, OH15044 | *otEx6974, otEx6975* | | *OH13470 otIs354(cho-1fosmid::yfp);*  *pha-1(e2123)III; him-5(e1490)V* | I1, M1, M2, M4, MC, ADF, AIY, AVA, AVB, AVD, AVE, AWB, IL2, RIH, RIR, RIV, RMD, RMF, RMH, SAA, SIA, SIB, SMB, SMD, URA, URB, AS1-11, DA1-9, DB1-7, SAB, VA1-12, VB1-11, PDA, PDB, DVA  Additionally, in male: PHD, PVX, PVY |
| ***unc-17prom2::tagrfp****, pha-1(pBX)* | OH15045 | *otEx6976* | | *OH13470 otIs354(cho-1fosmid::yfp);*  *pha-1(e2123)III; him-5(e1490)V* | I1, M1, M2, M4, MC, ADF, AIY, AWB, IL2, RIH, RIR, RIV, RMD, RMF, RMH, SAA, SIA, SIB, SMB, SMD, URA, URB  Additionally, in male: PHD |
| ***unc-17prom3::tagrfp****, pha-1(pBX)* | OH15047, OH15048 | *otEx6978, otEx6979* | | *OH13470 otIs354(cho-1fosmid::yfp);*  *pha-1(e2123)III; him-5(e1490)V* | I1, M1, M2, M4, MC, AIY, AWB, IL2, RIH, URA, URB  Additionally, in male: PHD |
| ***unc-17prom4::gfp*** | OH15152, OH15153 | *otIs660, otIs661* | | N2 | I1, I3, M1, M2, M4, MC, AIY, IL2, TIH, RIR  Additionally, in male: PHD |
| ***unc-17prom5::gfp*** | LX929 | *vsIs48* | |  | I1, I3, M1, M2, M4, M5, MC, ADF, AIY, AVA, AVB, AVD, AVE, AWB, IL2, RIH, RIR, RIV, RMD, RMF, RMH, SAA, SIA, SIB, SMB, SMD, URA, URB, AS1-11, DA1-9, DB1-7, SAB, VA1-12, VB1-11, SDQ, PDA, PDB, DVA (male not analyzed) |
| ***unc-17prom6::2xnls::DsRed2*** | OH10648 | *otEx4750* | | *pha-1(e2123)III* | AVA, AVB, AVD, AVE, AS1-11, DA1-9, DB1-7, SAB, VA1-12, VB1-11, PDA, PDB, DVA (male not analyzed) |
| ***unc-17prom7::tagrfp****, pha-1(pBX)* | OH15052, OH15053 | *otEx6982, otEx6983* | | *OH13470 otIs354(cho-1fosmid::yfp);*  *pha-1(e2123)III; him-5(e1490)V* | RIR, RIV, RMD, RMF, RMH, SAA, SIA, SIB, SMB, SMD |
| ***unc-17prom8::tagrfp****, pha-1(pBX)* | OH15054, OH15055 | *otEx6984, otEx6985* | | *OH13470 otIs354(cho-1fosmid::yfp);*  *pha-1(e2123)III; him-5(e1490)V* | I1, M1, M2, M4, MC, AIY, AWB, RIH |
| ***unc-17prom8\_B30::tagrfp****, pha-1(pBX)* | OH15060,  OH15061 | *otEx6990, otEx6991* | | *OH13470 otIs354(cho-1fosmid::yfp);*  *pha-1(e2123)III; him-5(e1490)V* | I1, M1, M2, M4, MC |
| ***unc-17prom9::tagrfp****, pha-1(pBX)* | OH15056, OH15057 | *otEx6986, otEx6987* | | *OH13470 otIs354(cho-1fosmid::yfp);*  *pha-1(e2123)III; him-5(e1490)V* | IL2, URA, URB |
| ***unc-17prom9\_C39::tagrfp****, pha-1(pBX)* | OH15062, OH15063 | *otEx6992, otEx6993* | | *OH13470 otIs354(cho-1fosmid::yfp);*  *pha-1(e2123)III; him-5(e1490)V* | IL2 |
| ***unc-17prom10::tagrfp****, pha-1(pBX)* | OH15064, OH15065 | *otEx6994, otEx6995* | | *OH13470 otIs354(cho-1fosmid::yfp);*  *pha-1(e2123)III; him-5(e1490)V* | ADF, RIH, RIR, URX  Additionally, in male: AIM, SPC |
| ***unc-17\_250bp::yfp****, myo-2prom::gfp* | OH11345, OH11346 | *otEx5136, otEx5137* | | N2 | RVG, VNC and PAG motorneurons\* and few unidentified head cells. |
| ***unc-17\_200bp::yfp****, pha-1(pBX)* | OH11347,  OH11348 | *otEx5138, otEx5139* | | *pha-1(e2123)III* | RVG, VNC and PAG motorneurons\* and few unidentified head cells. |
| ***unc-17\_150bp::yfp****, pha-1(pBX)* | OH11452,  OH11453 | *otEx5198, otEx5199* | | *pha-1(e2123)III* | RVG, VNC and PAG motorneurons\* and few unidentified head cells. |
| ***unc-17\_125bp::yfp****, pha-1(pBX)* | OH11684,  OH11685 | *otEx5308, otEx5309* | | *pha-1(e2123)III* | RVG, VNC and PAG motorneurons\* and few unidentified head cells. |
| ***unc-17\_250bp\_A47\_B30::yfp****, pha-1(pBX)* | OH12426,  OH12427 | *otEx5610, otEx5611* | | *pha-1(e2123)III* | RVG, VNC and PAG motorneurons\* and few unidentified head cells. |
| ***unc-17\_250bp\_C72\_B30::yfp****, pha-1(pBX)* | OH12428,  OH12429 | *otEx5612, otEx5613* | | *pha-1(e2123)III* | RVG, VNC and PAG motorneurons\* and few unidentified head cells. |
|  | | | | |  |
| ***cho-1fosmid::sl2::yfp****, pha-1(pBX)* | OH13470 | *otIs354* | | *pha-1(e2123)III; him-5(e1490)V* | M4, M5, ADF, AIA, AIN, AIY, ASJ, AVA, AVB, AVE, AVD, AVE, AWB, IL2, RIB, RIH, RIR, RIV, RMD, RMF, RMH, SAA, SIA, SIB, SMB, SMD, URA, URB, URX, AS1-11, DA1-9, DB1-7, RIF, SAB, VA1-11, VB1-11, VC1-6, SDQ, PDA, PDB, PVP, ALN, DVA, PLN, PVC |
| ***cho-1fosmid-COE mut::sl2::yfp 15****, pha-1(pBX)* | OH13172 | *otEx6066* | | *pha-1(e2123)III* | M4, M5, ADF, AIA, AIN, AIY, ASJ, AWB, IL2, RIB, RIH, RIR, RIV, RMD, RMF, RMH, SAA, SIA, SIB, SMB, SMD, URA, URB, URX, RIF, VC1-6, SDQ, PVP, ALN, PLN |
| ***cho-1prom1::tagrfp*** *, pha-1(pBX)* | OH10209 | *otEx4529* | | *pha-1(e2123)III* | M4, M5, ADF, AIA, AIN, AIY, ASJ, AVA, AVB, AVE, AVD, AVE, AWB, IL2, RIB, RIH, RIR, RIV, RMD, RMF, RMH, SIA, SIB, SMB, SMD, URA, URB, URX, AS1-11, DA1-9, DB1-7, RIF, SAB, VA1-11, VB1-11, VC1-6, SDQ, PDA, PDB, PVP, ALN, DVA, PLN, PVC |
| ***cho-1prom2::nls::tagrfp*** *, pha-1(pBX)* | OH10220 | *otEx4535* | | *pha-1(e2123)III* | M4, M5, ADF, AIA, AIN, AIY, AWB, RIB, RIH, RIR, RIV, RMD, SIA, SIB, SMB, SMD, URX, RIF, PVP |
| ***cho-1prom3::tagrfp*** *, pha-1(pBX)* | OH10210 | *otEx4530* | | *pha-1(e2123)III* | M4, M5, ADF, RIH, RIR, URX, PVP |
| ***cho-1prom4::tagrfp****, pha-1(pBX)* | Strain not available | | | *pha-1(e2123)III* | M4, M5, ADF, RIH, RIR, URX, PVP |
| ***cho-1prom5::tagrfp****, pha-1(pBX)* | Strain not available | | | *pha-1(e2123)III* | M4, M5, ADF, RIH, RIR, URX, PVP |
| ***cho-1prom6::tagrfp****, pha-1(pBX)* | Strain not available | | | *pha-1(e2123)III* | M4, M5, ADF, RIH, RIR, URX, PVP |
| ***cho-1prom7::tagrfp****, pha-1(pBX)* | Strain not available | | | *pha-1(e2123)III* | M4, M5, ADF, RIH, RIR, URX, PVP |
| ***cho-1prom8::2xnls::yfp****, pha-1(pBX)* | OH11649, OH11650 | *otEx5290, otEx5291* | | *pha-1(e2123)III* | AVA, AVB, AVE, AVD, AVE, IL2, AS1-11, DA1-9, DB1-7, SAB, VA1-11, VB1-11, PDA, PDB, DVA |
| ***cho-1prom9::tagrfp****, pha-1(pBX)* | Strain not available | | | *pha-1(e2123)III* | AIA, AIN, AIY, ASJ, AWB, RIB, RIV, RMD, SIA, SIB, SMB, SMD, RIF, ALN, PLN |
| ***cho-1prom10::tagrfp****, pha-1(pBX)* | Strain not available | | | *pha-1(e2123)III* | ASJ, AWB, RIF |
| ***cho-1prom12::tagrfp****, pha-1(pBX)* | Strain not available | | | *pha-1(e2123)III* | M4, M5, AIA, AIN, AIY, RIB, RIR, RMD, SIA, SIB, SMB, SMD, ALN, PLN |
| ***cho-1prom13::tagrfp****, pha-1(pBX)* | Strain not available | | | *pha-1(e2123)III* | AIA, AIN, AIY, RIB, RIV, RMD, ALN, PLN |
| ***cho-1prom14::tagrfp****, unc-122p::GFP* | OH16511 | | *otEx7576* | *Panneuronal::yfp* | RMD, SIA, SMD |
| ***cho-1prom15::tagrfp****, inx-6p18::tagrfp* | OH16509 | | *otEx7574* | *Panneuronal::yfp* | AIA, AIN, AIY, RIB, SIA, SIB, SMB, SMD, ALN, PLN |
| ***cho-1prom16::tagrfp****, inx-6p18::tagrfp* | OH16510 | | *otEx7575* | *Panneuronal::yfp* | M5, PVP |
|  | | | | |  |
| ***ace-2fosmid::sl2::nls::gfp,*** *elt-2::DsRed* | OH9969 | *otEx4431* | | N2 | M4, AVA, AVB, AVD, AVE, RIH, AS1-11, DA1-9, DB1-7, VA1-12, VB1-11, PDA, DVA |
| ***ace-2prom1::2xnls::DsRed2****, pha-1(pBX)* | OH10644 | *otEx4746* | | N2 | AVA, AVB, AVE, RIH, AS1-11, DA1-7, DB1-7, RIF, SABD, VA1-11, VB1-11, PDB, DVA |
| ***ace-2prom2::2xnls::DsRed2*** *, pha-1(pBX)* | OH10635 | *otEx4741* | | N2 | AVA, AVE, RIH, RIF, SABD, DVA |
| ***ace-2prom3::2xnls::yfp****, pha-1(pBX)* | OH11647 | *otEx5288* | | N2 | IL2, URA, URB, AS1-10, DA1-7, DB1-7, VA1-11, VB1-11 |
|  | | | | |  |
| ***unc-25prom1::gfp,*** *rol-6(pRF4)* | OH16399  OH16400  OH16401 | *otEx7507*  *otEx7508*  *otEx7509* | | N2 | RMEs, D-type MN |
| ***unc-25prom2::gfp,*** *rol-6(pRF4)* | OH16402  OH16403  OH16404 | *otEx7510*  *otEx7511*  *otEx7512* | | N2 | RMEs, D-type MN |
| ***unc-25prom3::gfp,*** *rol-6(pRF4)* | OH16405  OH16406  OH16407 | *otEx7513*  *otEx7514*  *otEx7515* | | N2 | RMEs, D-type MN |
| ***unc-25prom3del1::gfp,*** *rol-6(pRF4)* | OH14747, OH14748, OH14749 | *otEx6850,*  *otEx6851,*  *otEx6852* | | N2 | RMEs |
| ***unc-25prom4::gfp,*** *rol-6(pRF4)* | OH13489, OH13490,  OH13491 | *otEx6265,*  *otEx6266,*  *otEx6267* | | N2 | D-type MN |
| ***unc-25\_3intron1::gfp,*** *rol-6(pRF4)* | OH16408  OH16409  OH16410 | *otEx7516*  *otEx7517*  *otEx7518* | | N2 | RIB, RIS, AVL, DVB, RMEs  Additionally, in male: EF1/2, EF3, R1A, R8A, R9B |
| ***unc-25\_3intron2::gfp****, rol-6(pRF4)* | OH16411  OH16412  OH16413 | *otEx7519*  *otEx7520*  *otEx7521* | | N2 | RIB, RIS, AVL, RMEs  Additionally, in male: EF1/2, EF3, R1A, R8A, R9B |
|  | | | | |  |
| ***unc-47prom1::gfp,*** *rol-6(pRF4)* | OH16414  OH16415  OH16416 | *otEx7522*  *otEx7523*  *otEx7524* | | N2 | RIB, RIS, AVL, DVB, RMEs, D-type MN |
| ***unc-47prom1::mCHOPTI*** *pha-1(pBX)* | OH10598  OH10892 | *otIs348*  *otIs374* | | *pha-1(e2123) III* | RIB, RIS, AVL, DVB, RMEs, D-type MN |
| ***unc-47prom2::gfp,*** *rol-6(pRF4)* | OH16417  OH16418  OH16419 | *otEx7525*  *otEx7526*  *otEx7527* | | N2 | RIS, AVL, DVB, RMEs |
| ***unc-47prom2::gfp,*** *pha-1(pBX)* | OH12492, OH12493,  OH12526, OH12527 | *otIs515,*  *otIs516,*  *otIs522,*  *otIs523* | | *pha-1(e2123) III* | RIS, AVL, DVB, RMEs |
| ***unc-47prom3::gfp,*** *rol-6(pRF4* | OH16420  OH16421  OH16422 | *otEx7528*  *otEx7529*  *otEx7530* | | N2 | RIB, RIS, DVB, RMEs, D-type MN |
|  | | | | |  |
| ***unc-46prom1::gfp,*** *rol-6(pRF4)* | OH16423  OH16424  OH16425 | *otEx7531*  *otEx7532*  *otEx7533* | | N2 | RIB, RIS, AVL, DVB, RMEs, D-type MN, RIA |
| ***unc-46prom1::gfp****, pha-1(pBX)* | OH13031  OH13032  OH13033 | *otIs573,*  *otIs574,*  *otIs575* | | *pha-1(e2123) III* | RIB, RIS, AVL, DVB, RMEs, D-type MN, RIA |
| ***unc-46prom2::gfp,*** *rol-6(pRF4)* | OH16426  OH16427  OH16428  OH16429 | *otEx7534*  *otEx7535*  *otEx7536*  *otEx7537* | | N2 | RIB, RIS, DVB, RMEs |
| ***unc-46prom3::gfp,*** *rol-6(pRF4)* | OH16430  OH16431  OH16432 | *otEx7538*  *otEx7539*  *otEx7540* | | N2 | DVB, D-type MN |

\*Specific neurons are not identified in these constructs.