**Supplementary File 1 - Strain list**

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| **Strain Name** | ***Mutant or knock-in*** | **Array name** | **DNA on array** | **Reference** |
| OH15151 | *ceh-34(tm3733)* | *otEx7040* | *ceh-34Fosmid, myo-3prom::mCherry* | Fosmid rescue of allele described in (Amin et al., 2009) |
| OH16335 | *ceh-34(ot1014)* | *otEx7476* | *ceh-34Fosmid, myo-3prom::mCherry* | This study |
| OH17564 | *ceh-34(ot1188) flr-2(syb4861)/+ flr-2(syb4861)* |  |  | This study |
| OH17565 | *ceh-34(ot1189) htrl-1(syb4895)/+ htrl-1(syb4895* |  |  | This study |
| OH15439 | *ceh-34(ot903[ceh-34::mNG::3xFLAG::AID]* |  |  | This study |
| MT15695 | *ceh-34(n4796)* |  |  | (Hirose et al., 2010) |
| OH17817 | *eya-1(ot1197)* | *otIs661* | *unc-17prom::GFP, unc-122prom::GFP* | This study |
| SA146 | *eya-1(ok654)* |  |  | (Furuya et al., 2005) |
| MT1859 | *unc-86(n846)* |  |  | (Baumeister et al., 1996) |
| OH15422 | *ceh-14(ot900)* |  |  | (Bayer and Hobert, 2018) |
| TB200 | *ceh-2(ch4)* |  |  | (Aspock et al., 2003) |
| OH16563 | *ceh-45(ot1065)* |  |  | This study |
| OH17142 | *vab-15(ot1136); unc-17(ot907[unc-17::mKate2::3xFLAG])* |  |  | This study |
| OH17144 | *ceh-7(ot907); unc-17(ot907[unc-17::mKate2::3xFLAG])* |  |  | This study |
| OH16564 | *ceh-53(ot1066)* |  |  | This study |
| OH16565 | *ceh-79(ot1067)* |  |  | This study |
| JK1521 | *fog-2(q71) pha-4(q490)/stu-3(q265) rol-9(sc148)* |  |  | (Mango et al., 1994) |
| CX5000 | *slt-1(eh15)* |  |  | (Hao et al., 2001) |
| PHX4513 | *flp-5(syb4513 [flp-5::SL2::GFP::H2B])* |  |  | This study |
| PHX3207 | *flp-28(syb3207 [flp-28::T2A::3×NLS::GFP])* |  |  | This study |
| PHX4861 | *flr-2(syb4861 [flr-2::SL2::GFP::H2B])* |  |  | This study |
| PHX4895 | *htrl-1(syb4895 [htrl-1::SL2::GFP::H2B])* |  |  | This study |
| PHX4677 | *kin-36(syb4677[GFP::HIS::SL2::kin-36])* |  |  | This study |
| OH15876 | *pha-4(ot946 [pha-4::GFP])* |  |  | This study |
| PHX4763 | *rig-3(syb4763 [rig-3::SL2::GFP::H2B])* |  |  | This study |
| PHX4729 | *rig-6(syb4729 [rig-6::SL2::GFP::H2B])* |  |  | This study |
| PHX4502 | *ser-7(syb4502 [ser-7::SL2::GFP::H2B])* |  |  | This study |
| PHX4421 | *trh-1(syb4421 [trh-1::SL2::GFP::H2B])* |  |  | This study |
| PHX4453 | *trhr-1(syb4453 [trhr-1::SL2::GFP::H2B])* |  |  | This study |
| PHX4491 | *unc-17(syb4491[unc-17::T2A::GFP:H2B])* |  |  | This study |
| PHX4257 | *eat-4(syb4257)[eat-4::T2A::GFP::H2B])* |  |  | This study |
| OP575 | *unc-119(tm4063)* | *wgIs575* | *ceh-33fosmid::TY1::EGFP::3xFLAG, unc-119(+)* | (Sarov et al., 2012) |
| OP524 | *unc-119(tm4063)* | *wgIs524* | *ceh-34fosmid::TY1::EGFP::3xFLAG, unc-119(+)* | (Sarov et al., 2012) |
| SD1345 |  | *stIs10077* | *pha-4prom::his-24::mCherry, unc-119(+)* | (Liu et al., 2009) |
| HML1012 |  | *cshIs140* | *rps-28p::TIR1(F79G)::T2A::mCherry::his-11 + Cbr-unc-119(+)* | PMID: 34739048 |
| OH8251 |  | *otIs226* | *bas-1prom::gfp* | (Flames and Hobert, 2009) |
| OH8246 |  | *otIs221* | *cat-1prom::gfp* | (Flames and Hobert, 2009) |
| OH8259 |  | *otIs224* | *cat-1prom::gfp* | (Flames and Hobert, 2009) |
| OH8250 |  | *otIs225* | *cat-4prom::gfp* | (Flames and Hobert, 2009) |
| OH12262 |  | *otIs487* | *eat-4prom7::gfp, ttx-3prom::mCherry* | (Serrano-Saiz et al., 2020) |
| OH12797 |  | *otIs558* | *eat-4prom14::gfp, ttx-3prom::mCherry* | (Serrano-Saiz et al., 2020) |
| OH12496 |  | *otIs518* | *eat-4fosmid::SL2::mCherry, pha-1(+)* | (Serrano-Saiz et al., 2013) |
| OH11124 |  | *otIs388* | *eat-4fosmid::SL2::YFP::H2B, pha-1(+)* | (Serrano-Saiz et al., 2013) |
| MT19075 |  | *nIs352* | *eya-1p::GFP::eya-1* | (Furuya et al., 2005; Hirose et al., 2010) |
| NY2057 | *him-5(e1490)* | *ynIs57* | *flp-2prom::GFP* | (Kim and Li, 2004) |
| NY2030 |  | *ynIs30* | *flp-4prom::GFP* | (Kim and Li, 2004) |
| NY2045 | *him-5(e1490)* | *ynIs45* | *flp-15prom::GFP* | (Kim and Li, 2004) |
| NY2080 |  | *ynIs80* | *flp-21prom::GFP* | (Kim and Li, 2004) |
| OH16816 |  | *otIs809* | *glr-7::GFP, lin-15(+)* | Integrant of Ex array described in (Brockie et al., 2001) |
| MT24110 | *lin-15(n765)* | *nIs780* | *gur-3prom::GFP, lin-15(+)* | (Sando et al., 2021) |
| OH10545 |  | *otIs341* | *mgl-1prom::GFP, pha-1(+)* | (Zhang et al., 2014) |
| OH15487 |  | *otIs695* | *nlp-3prom::GFP, lin-15(+)* | Integrant of Ex array described in (Nathoo et al., 2001) |
| OH15655 |  | *otIs711* | *nlp-8prom::GFP, lin-15(+)* | Integrant of Ex array described in (Nathoo et al., 2001) |
| OH16003 |  | *otIs742* | *nlp-13prom::GFP, lin-15(+)* | Integrant of Ex array described in (Nathoo et al., 2001) |
| OH9609 |  | *otIs291* | *rab-3prom::2xNLS::YFP, rol-6(su1006)* | (Stefanakis et al., 2015) |
| OH10689 |  | *otIs355* | *rab-3prom::2xNLS::TagRFP* | (Stefanakis et al., 2015) |
| OH10684 |  | *otIs350* | *ric-4fosmid::SL2::NLS::YFP::H2B, pha-1(+)* | (Stefanakis et al., 2015) |
| OH11061 |  | *otIs380* | *ric-19prom::2xNLS::GFP, elt-2::DsRED* | (Stefanakis et al., 2015) |
| OH13606 |  | *otIs620* | *unc-11prom::2xNLS::GFP* | (Leyva-Diaz et al., 2017) |
| SD1614 |  | *stIs10447* | *ceh-34prom::HIS-24::mCherry, unc-119(+)* | (Liu et al., 2009) |
| CX4384 |  | *kyIs174* | *slt-1prom::GFP* | (Hao et al., 2001) |
| OH17563 |  | *otIs868* | *spp-12prom::spp-12(1-97)::GFP* | Integrant of Ex array described in 22519640 |
| OH15699 |  | *otIs716* | *str-97prom::GFP, rol-6(su1006)* | Integrant of Ex array described in (Vidal et al., 2018) |
| OH12495 |  | *otIs517* | *tph-1fosmid::SL2::YFP::H2B, ttx-3::mCherry* | (Serrano-Saiz et al., 2017) |
| SK4013 |  | *zdIs13* | *tph-1prom::GFP* | (Clark and Chiu, 2003) |
| OH15153 |  | *otIs661* | *unc-17prom::GFP, unc-122prom::GFP* | (Serrano-Saiz et al., 2020) |
| OH16393 |  | *otEx7503* | *unc-4prom::GFP::CLA-1, unc-4prom::tagRFP, rol-6(su1006)* | (Cook et al., 2020) |
| OH16337 |  | *otIs762* | *ceh-34prom::TagRFP, pha-1(+)* | This study |
| OH16700 |  | *otIs785* | *ceh-34prom::GFP::CLA-1, ceh-34prom::TagRFP, rol-6(su1006)* | This study |
| OH17856 |  | *otEx7922* | *ehs-1p::ttx-3, ehs-1p::unc-86, rol-6(su1006) – Line 1* | This study |
| OH17857 |  | *otEx7923* | *ehs-1p::ttx-3, ehs-1p::unc-86, rol-6(su1006) – Line 2* | This study |
| OH17858 |  | *otEx7924* | *ehs-1p::ttx-3, ehs-1p::unc-86, rol-6(su1006) – Line 3* | This study |

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