**Supplementary Table S1: Strain list**

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| **Strain Name** | **Genotype** | **Notes** |
| OH9846 | *otIs305 [hsp16-2prom:che-1:3xHA:BLRP; rol-6(d)] ntIs1 [gcy-5:gfp; lin-15(+)] V.* | Reference: Tursun B, et al. Science. 2011 ; 331(6015):304-8. |
| OH10367 | *geco(ot660)/+; otIs305ntIs1* |  |
| OH10368 | *geco(ot661)/+; otIs305ntIs1* |  |
| OH10369 | *geco(ot662)/+; otIs305ntIs1* |  |
| OH10370 | *geco(ot663)/+; otIs305ntIs1* |  |
| OH10371 | *geco(ot664)/+; otIs305ntIs1* |  |
| OH10372 | *geco(ot665)/+; otIs305ntIs1* |  |
| OH10373 | *geco(ot666)/+; otIs305ntIs1* |  |
| OH10374 | *geco(ot667)/+; otIs305ntIs1* |  |
| OH10375 | *geco(ot668)/+; otIs305ntIs1* |  |
| OH10376 | *geco(ot669)/+; otIs305ntIs1* |  |
| OH10377 | *geco(ot670)/+; otIs305ntIs1* |  |
| OH10378 | *geco(ot671)/+; otIs305ntIs1* |  |
| OH10379 | *geco(ot672)/+; otIs305ntIs1* |  |
| OH10380 | *geco(ot673)/+; otIs305ntIs1* |  |
| OH10381 | *usp-48(ot674)/+; otIs305ntIs1* |  |
| OH10383 | *geco(ot675)/+; otIs305ntIs1* |  |
| OH10384 | *geco(ot676)/+; otIs305ntIs1* |  |
| OH10385 | *geco(ot677)/+; otIs305ntIs1* |  |
| OH10386 | *geco(ot678)/+; otIs305ntIs1* |  |
| OH10387 | *geco(ot679)/+; otIs305ntIs1* |  |
| OH10388 | *geco(ot680)/+; otIs305ntIs1* |  |
| OH10389 | *geco(ot681)/+; otIs305ntIs1* |  |
| OH10390 | *geco(ot682)/+; otIs305ntIs1* |  |
| OH10391 | *geco(ot683)/+; otIs305ntIs1* |  |
| OH10392 | *geco(ot684)/+; otIs305ntIs1* |  |
| OH10393 | *geco(ot685)/+; otIs305ntIs1* |  |
| OH10394 | *geco(ot686)/+; otIs305ntIs1* |  |
| OH10395 | *geco(ot687)/+; otIs305ntIs1* |  |
| OH10396 | *geco(ot688)/+; otIs305ntIs1* |  |
| OH10397 | *geco(ot689)/+; otIs305ntIs1* |  |
| OH10398 | *geco(ot690)/+; otIs305ntIs1* |  |
| OH10399 | *geco(ot691)/+; otIs305ntIs1* |  |
| OH10400 | *geco(ot692)/+; otIs305ntIs1* |  |
| OH10401 | *geco(ot693)/+; otIs305ntIs1* |  |
| OH10402 | *geco(ot694)/+; otIs305ntIs1* |  |
| OH10403 | *geco(ot695)/+; otIs305ntIs1* |  |
| OH11177 | *usp-48(ot674)/hT2[bli-4(e937)let(q782)qIs48](I; III)/+; otIs305ntIs1* |  |
| OH15718 | *usp-48(mg457))/hT2[bli-4(e937)let(q782)qIs48](I; III)/+; otIs305ntIs1* |  |
| OH13939 | *usp-48(ot828)[usp-48:TY1:GFP:3xFLAG]* | GFP sequence from Transgenome Project fosmid (Sarov *et al. 2012*) |
| RB1010 | *gcy-5(ok930)II.* |  |
| NM1657 | *unc-10(md1117)X.* |  |
| OH3192 | *ntIs1[gcy-5:gfp; lin-15(+)]V.* |  |
| OH14796 | *otIs642[col-19:che-1,rol-6(d)]; ntIs1[gcy-5:gfp; lin-15(+)]* |  |
| OH14795 | *usp-48(ot872); otIs642; ntIs1* |  |
| OH14795 | *usp-48(ot872); ntIs1* |  |
| OH14992 | *ogt-t(ot878); otIs642; ntIs1* |  |
| OH14992 | *ogt-t(ot878); ntIs1* |  |
| OH15084 | *nhr-48(ot880); otIs642; ntIs1* |  |
| OH15085 | *nhr-48(ot881); otIs642; ntIs1* |  |
| OH15169 | *dot-1.1(ot885); otIs642; ntIs1* |  |
| OH15169 | *dot-1.1(ot885); ntIs1* |  |
| OH15170 | *pmk-1(ot886); otIs642; ntIs1* |  |
| OH15171 | *pmk-1(ot887); otIs642; ntIs1* |  |
| OH15614 | *nhr-48(ot915); otIs642; ntIs1* |  |
| OH15614 | *nhr-48(ot915); ntIs1* |  |
| OH15615 | *sek-1(ot916); otIs642; ntIs1* |  |
| OH15616 | *pmk-1(ot917); otIs642; ntIs1* |  |
| OH15617 | *pmk-1(ot918); otIs642; ntIs1* |  |
| OH15617 | *pmk-1(ot918); ntIs1* |  |
| OH15618 | *ogt-1(ot919); otIs642; ntIs1* |  |
| OH15619 | *ogt-1(ot920); otIs642; ntIs1* |  |
| OH15620 | *sek-1(ot921); otIs642; ntIs1* |  |
| OH15620 | *sek-1(ot921); ntIs1* |  |
| OH15682 | *lido-1(ot925); otIs642; ntIs1* |  |
| OH15682 | *lido-1(ot925); ntIs1* |  |
| OH15723 | *ecta(ot926); otIs642; ntIs1* |  |
| OH15724 | *ecta(ot927); otIs642; ntIs1* |  |
| OH15725 | *ecta(ot928); otIs642; ntIs1* |  |
| OH15727 | *ecta(ot930); otIs642; ntIs1* |  |
| OH15172 | *ogt-1(ot888[ogt-1:gfp])* |  |
| OH15329 | *dot-1.1(ot899[dot-1.1:GFP:3xFLAG])* |  |
| OH15939 | *ogt-1(ok430); otIs642; ntIs1* |  |
| OH15940 | *pmk-1(km25); otIs642; ntIs1* |  |
| OP518 | *unc-119; wgIs518[nhr-48::TY1::GFP::3xFLAGfosmid; unc-119+]* |  |
| OH15941 | *ogt-t(ot878); otIs642; ntIs1; otEx7377[ogt-1fosmid; myo-2::rfp]* | fosmid: WRM062bD05 |
| OH15942 | *nhr-48(ot881); otIs642; ntIs1; ex7378[nhr-48fosmid; myo-2::rfp]* | fosmid: WRM068bG10 |