**Supplementary Table S1: Strain list**

|  |  |  |  |
| --- | --- | --- | --- |
| **DNA on array** | **Strain name** | **Trans-gene** | **Strain background** |
| **Reporter strains generated in this study** | | | |
| *Ex[vglu-2prom2::nls::tagrfp 50 ng/l; unc-122::gfp 50 ng/l]* | OH15832,  OH16021 | *otEx7346,*  *otEx7404* | *him-5(e1490)V* |
| *Ex[vglu-2fosmid::sl2::yfp::h2b 5 ng/l;*  *unc-122::gfp 5 ng/l; bacterial genomic DNA 90 ng/l]* | OH15848,  OH15849 | *otEx7350,*  *otE7351* | *vglu-2(gk625231)III* |
| *Ex[pmgl-1prom::vglu-2 5 ng/µl; myo-2::mCherry 20 ng/µl; pBS 75 ng/µl]* | OH16031,  OH16032 | *otEx7407*  *otEx7408* | *vglu-2(gk625231)III* |
| **Transgenic and mutant strains** | | | |
| *vglu-2(syb362[vglu-2::gfp])* | PHX362 |  |  |
| *vglu-2(syb679 [vglu-2::gfp])* | PHX679 |  |  |
| *vglu-2(syb362[vglu-2::gfp]); otIs544(cho-1fos::sl2::cherry::h2b)* | OH15778 |  |  |
| *vglu-2(syb362[vglu-2::gfp]); ttx-3(ot22)* | OH15806 |  |  |
| *vglu-2(syb362[vglu-2::gfp]); him-5(e1490)* | OH16321 |  |  |
| *vglu-2(ok2356)III* | OH15851 |  |  |
| *vglu-2(gk625231)III* | OH15852 |  |  |
| *vglu-2(gk738584)III* | OH15853 |  |  |
| *vglu-3(gk765782)III* | OH15854 |  |  |
| *vglu-3(tm3990)III* | OH15855 |  |  |
| *kaIs[col-19::GFP]* | TP12 1 |  |  |
| *kaIs[col-19::GFP]; vglu-2(ok2356)III* | OH15953 |  |  |
| *kaIs[col-19::GFP]; vglu-2(gk625231)III* | OH15954 |  |  |
| *kaIs[col-19::GFP]; vglu-2(gk738584)III* | OH15955 |  |  |
| *chEx1682*[pLH070(*qua-1::gfp* + *rol-6*(*su1006*)] | TB1682 2 |  |  |
| *chEx1682* [pLH070(*qua-1::gfp* + *rol-6*(*su1006*)]*; vglu-2(ok2356)III* | OH15956 |  |  |
| *chEx1682* [pLH070(*qua-1::gfp* + *rol-6*(*su1006*)]*; vglu-2(gk625231)III* | OH15991 |  |  |
| *chEx1682* [pLH070(*qua-1::gfp* + *rol-6*(*su1006*)]*; vglu-2(gk738584)III* | OH15992 |  |  |
| *qxIs466(pced-1::mCherry::unc-108)* | 3 |  |  |
| *pwSi44[phyp7::mScarlet::apm-2 + G418-R]* | RT3605 |  |  |
| *pwSi65[phyp7::mScarlet::snx-1 + G418-R]* | RT3640 |  |  |
| *pwSi46[phyp7::mScarlet::hgrs-1 + G418-R]* | RT3657 |  |  |
| *pwSi19[phyp7::tagrfp::rab-7 + HYG-R]* | RT3545 |  |  |
| *pwSi30[phyp7:: apm-1::mScarlet + G418-R]* | RT3556 |  |  |
| *pwSi62[phyp7::mScarlet::lgg-1 + G418-R]* | RT3635 |  |  |
| *mcIs52[pCbr-unc-119::Cbr-unc-119(+):VHA-5::mRFP1]* | ML1542 4 |  |  |
| *gcy-28dp::unc-103(gof)::sl2::mCherry 30 ng/l, elt-2::mCherry 2 ng/l, pSM 70 ng/l* | CX14597 5 | *kyEx4745* |  |

1 Liu et al., 1995

2 Hao et al., 2006

3 Yin et al., 2017

4 Dierking et al., 2011

5 Larsch al., 2015