

with *gfp::3xflag* at its C-terminus using CRISPR/Cas9 genome engineering (Dokshin *et al.*, 2018) and examined its expression. We cloned *gfp* from the *che-1(ot856[che-1::gfp])* allele (Leyva-Diaz and Hobert, 2019), inserted it into the pMiniT 2.0 vector (NEB), and used that resulting plasmid for subsequent cloning of the *gfp* tag.

Embryonic expression of *exc-7* was first observed at the bean stage. By reverse lineaging with use of SIMI-Biocell software (Schnabel *et al.*, 1997), we confirm the identity of one of the expressing cells at this stage as the excretory canal cell (Fig. 1B, arrow). In L1 animals, broad expression in the head, ventral nerve cord (VNC), and tail was observed (Fig. 1C). In young adults, expression is notably observed in vulva cells (Fig. 1D’). In the nervous system specifically, expression is observed in many neurons throughout the body (Fig. 1D’-D’’), but unlike *Drosophila* Elav, *exc-7::gfp* it is not panneuronally expressed. We used the NeuroPAL transgene (<https://www.biorxiv.org/content/10.1101/676312v1>) to individually identify each neuron in which *exc-7* is expressed in the young adult worm. Sites of expression are listed in Fig. 1F and some examples of neuronal expression are shown in Fig. 1E’. Expression in all neurons is at least several fold more intense than UPN::NLS::TagRFP-T signal from NeuroPAL. We confirmed previously reported expression in cholinergic VNC MNs, but absence of GABAergic VNC MNs (Fig. 1E’), consistent with previous reports (Fujita *et al.*, 1999; Loria *et al.*, 2003) and consistent with *exc-7* functioning in cholinergic, but not GABAergic neurons to control alternative splicing (Norris *et al.*, 2014). *exc-7::gfp* is also expressed in some non-neuronal cell types, including muscle and hypodermis, but not in the gut (Fig. 1D’-D’’). A previous report showed that *exc-7* is only transiently and weakly expressed in the excretory cell, which, based on *exc-7*'s excretory mutant phenotype, has puzzled researchers (Fujita *et al.*, 2003). We find that the *gfp* tagged *exc-7* locus is strongly and continuously expressed in the excretory canal cell (Fig. 1B-D’, arrow). We conclude that unlike its fly orthologue *elav*, *exc-7* is not a panneuronally expressed gene.

Reagents

OH16020: *exc-7(ot970[exc-7::gfp::3xflag])*

The strain is available through the CGC.

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