



**Figure S2** Demonstration of organelle marker specificity by co-localization of two organelle-specific markers.

**(A)** The lysosomal markers LMP-1-GFP and CTNS-1-RFP (mCherry) co-localize in motor neuron somas. Shown are six representative images collected from 6 different animals carrying both of the integrated transgenes *celIs181* [unc-129::CTNS-1A-mCherry] and *celIs192* [unc-129::LMP-1-GFP]. LMP-1 is the *C. elegans* ortholog of human Lysosome-Associated Membrane Protein/ CD68 (KOSTICH *et al.* 2000). CTNS-1 is the *C. elegans* ortholog of Cystinosis, which is a lysosome-specific Cysteine transporter (transports Cysteine from the lysosome lumen out to the cytosol to recycle it after lysosomal protein degradation) (KALATZIS *et al.* 2001). It has previously been shown to mark the lysosomes that are recruited to degrade cell corpses in *C. elegans* (KALATZIS *et al.* 2001; MANGAHAS *et al.* 2008).

**(B)** The early endosomal markers YFP-RAB-5 and RFP-SYN-13 co-localize in dorsal motor neuron axons. Shown is a representative image from a strain carrying the *ceEx346* [unc-129::RFP-SYN-13, unc-129::YFP-RAB-5] transgene.

**(C)** The Golgi markers AMAN-2-Venus and PST-2-CFP co-localize in motor neuron somas. Shown are six representative images collected from 6 different animals carrying both of the integrated transgenes *celIs195* [unc-129::AMAN-2-Venus] and *celIs185* [unc-129::PST-2A-CFP]. AMAN-2 is the *C. elegans* ortholog of a-Mannosidase II, which is known to localize to the Golgi in *C. elegans* and other animals (ORCI *et al.* 2000; ROLLS *et al.* 2002; SUMAKOVIC *et al.* 2009; VELASCO *et al.* 1993), PST-2 is a *C. elegans* ortholog of a Golgi-resident 3'-phosphoadenosine 5'-phosphosulfate (PAPS) transporter that is required for the production of extracellular sulfated molecules (DEJIMA *et al.* 2010). The two markers exhibit overlapping, but

slightly offset, patterns, suggesting that they localize to different compartments within the Golgi stacks. Unlike vertebrate cells that have a single juxtannuclear Golgi stack, most invertebrates neurons, including *C. elegans*, have 2-4 small Golgi “mini-stacks” (CHEN *et al.* 2006).