Supplemental Figure S1.

Expression pattern of $P_{flp-21}::GCaMP3$ in N2 worms. White lines indicate positions of MC, URA, and M4 neurons. Scale bar = 10 µm.

Supplemental Movie.

MC neuron exhibits a rhythmic Ca$^{2+}$ oscillation in phase with pharyngeal pumping. Dissected pharynx from young $P_{flp-21}::gcamp3$ & dsred2 transgenic worms was simultaneously recorded in the presence of 5 µM 5-HT. GFP channel (upper) captured G-CaMP3 signal monitoring Ca$^{2+}$ transient in MC neuron and DIC channel (lower) monitored pharyngeal pumping.
Supplemental Figure S2. RNAi of *pha-4* accelerates age-related decay in BSR and ESR. *A-B*, Changes in BSR (*A*) and ESR (*B*) behavior of *unc-119::sid-1*–expressing N2 worms after fed with bacteria expression *bas-1* and *pha-4* dsRNA for 5 days. Worms began to be subjected to RNAi at L4 stage, and about 30 worms per treatment were assayed for each behavior in 3 independent experiments. Data are presented as mean ± SE. Statistically significance are shown with *P*<0.001 (unpaired Student’s *t*-test).