**Video S1.** GCaMP5:mCherryratio recording of HSN Ca2+ activity in a control, wild-type adult animal during an egg-laying active state. High Ca2+ is indicated in red while low calcium is in blue. Head is at left, tail is at right.

**Video S2.** GCaMP5:mCherryratio recording of HSN Ca2+ activity in a *goa-1(n1134)* mutant adult animal during an egg-laying active state. High Ca2+ is indicated in red while low calcium is in blue. Head is at left, tail is at right.

**Video S3.** GCaMP5:mCherryratio recording of HSN Ca2+ activity in a *goa-1(sa734)* null mutant adult animal during an egg-laying active state. High Ca2+ is indicated in red while low calcium is in blue. Head is at right, tail is at left.

**Video S4.** GCaMP5:mCherryratio recording of HSN Ca2+ activity in a transgenic adult animal expressing Pertussis Toxin in the HSNs from the *tph-1* gene promoter during an egg-laying active state. High Ca2+ is indicated in red while low calcium is in blue. Head is at top, tail is at bottom.

**Video S5.** GCaMP5:mCherryratio recording of vulval muscle Ca2+ activity in a control wild-type adult animal during an egg-laying active state. High Ca2+ is indicated in red while low calcium is in blue. Head is at right, tail is at top.

**Video S6.** GCaMP5:mCherryratio recording of vulval muscle Ca2+ activity in a *goa-1(n1134)* mutant adult animal during an egg-laying active state. High Ca2+ is indicated in red while low calcium is in blue. Head is at right, tail is at left.

**Video S7.** GCaMP5:mCherryratio recording of vulval muscle Ca2+ activity in a transgenic adult animal expressing Pertussis Toxin in the HSNs from the *tph-1* gene promoter during an egg-laying active state. High Ca2+ is indicated in red while low calcium is in blue. Head is at left, tail is at right.