



**Movie 1. The effect of neuronal blockade and blockade of interstitial cells of Cajal on *in vivo* motility patterns in the proximal intestine of an individual shorthorn sculpin (*Myoxocephalus scorpius*).** The movie depicts gastrointestinal motility patterns from a section of exteriorized intestine from an individual shorthorn sculpin during control conditions (top panel), neuronal blockade (middle panel) and blockade of interstitial cells of Cajal (ICC, bottom panel). The exteriorized section of intestine consists of the proximal intestine and a portion of the middle intestine. The proximal intestine begins ~5 mm posterior of the pyloric caeca (bottom left) to the beginning of the middle intestine (section where the intestine loops around the pin). The spatio-temporal maps on the right hand side of the respective video panels were constructed from the section of the proximal intestine. The predominant rhythmic motility patterns in the proximal intestine of an individual shorthorn sculpin under control conditions are the slow anally-propagating contractions (*i.e.* prolonged, circular muscle contractions that slowly propagate in an anal direction, from bottom left to bottom right) and ‘ripples’ (*i.e.* rhythmic, high frequency, short duration, shallow circular muscle contractions primarily propagating in an oral direction over relatively small distances). Neurogenic blockade (1  $\mu$ M TTX) did not abolish the slow anally-propagating contractions or ‘ripples’, but altered their frequency and amplitude, whereas subsequent blockade of ICC with benzbromarone (100  $\mu$ M) significantly reduced or abolished these motility patterns.

**Table S1. Primary and secondary antisera used in present study**

Primary antisera						
Antigen		Host	Dilution	Supplier	Cat. no.	Batch no.
AcT, acetylated tubulin (sea urchin)		mouse (monoclonal)	1:1000	Sigma-Aldrich St Louis, MO, USA	T-6793	6-11B-1
Ano1, anoctamin 1 (TMEM16A) (human)		rabbit (polyclonal)	1:200-1:500	Abcam Oxford, UK	Ab53212	GR136214
Hu, human neuronal protein C/D (human)		mouse (monoclonal)	1:100-1:200	Molecular Probes Eugene, OR, USA	A21271	53877A
Secondary antisera						
Antigen	Fluorophore	Host	Dilution	Supplier	Cat. no.	Batch no.
Mouse IgG	FITC (fluorescein isothiocyanate)	donkey	1:100	Jackson ImmunoResearch Lab. West Grove, PA, USA	715-095-150	82572
Rabbit IgG	Cy3 (indocarbocyanine)	donkey	1:800	Jackson ImmunoResearch Lab. West Grove, PA, USA	711-165-152	61233