

**Fig. S1.** Wave frequency versus swimming speed of individual swimming sequences. Replicate swim sequences of each individual are indicated by color. Blue are control lampreys with each individual having a different shape.

**Table S1.** Multiple regression for swimming speed as a function of tail beat frequency and regeneration percentage.

Effect	$\chi^2$	df	P
Frequency	77.9	1	<0.001
Regeneration percentage	0.2	1	0.65
Frequency X Regeneration percentage	0.02	1	0.88

n = 83. Individual animal was included as a random effect in the model.