

Table S1

The model structure (model type, distribution and random effects) used for each *Aurelia aurita* polyp response variable (ruffling, elongation, budding and total), and the corresponding standard error (\pm). Random effects of the jar account for variation within the experimental container of each replicate. Random effects of the polyp total account for the changing total number of polyps throughout the course of the experiment.

	<i>Response Variable</i>			
	<i>Ruffling</i>	<i>Elongation</i>	<i>Budding</i>	<i>Total</i>
<i>Model Type</i>	GAMLSS	GAMLSS	GAMLSS	GAMLSS
<i>Model Distribution</i>	Weibull	Negative Binomial Type II	Negative Binomial Type II	Delaporte
<i>Random Effects</i>	Jar & Total	Jar & Total	Jar & Total	Jar
<i>Standard Error (\pm)</i>	0.105	0.987	2.65	12900

Table S2

The treatment (caffeine, estradiol and combination) p-values in isolation from time and through time for each *Aurelia aurita* polyp response variable (ruffling, elongation, budding and total number), as determined by the corresponding GAMLSS model. Significant p-values (<0.05) are in bold.

	<i>Response Variable</i>			
	<i>Ruffling</i>	<i>Elongation</i>	<i>Budding</i>	<i>Total</i>
<i>Collection Day (time)</i>	2.84e-11	6.74e-05	4.48e-07	0.0111
<i>Caffeine</i>	0.0278	0.647	0.153	0.983
<i>Estradiol</i>	0.647	0.935	0.760	0.991
<i>Combination</i>	0.0298	0.757	0.00201	0.911
<i>Caffeine Through Time</i>	0.330	0.234	0.540	0.698
<i>Estradiol Through Time</i>	0.900	0.266	0.651	0.961
<i>Combination Through Time</i>	0.435	0.128	0.0392	0.514