

## Supplementary Materials

**Table S1:** One-way analysis of variance on size (cephalothorax length), weight and relative condition (Kn) between males and females within each morphotype (pelagic, benthic) captured at the locations of Pisco in Peru and Faro Carranza in Chile.

	Morphotype		Df	Sum Sq	Mean Sq	F value	Pr(>F)
Cephalothorax length	Pelagic	Sex	1	3.300	3.287	0.876	0.351
		Residuals	154	577.800	3.752		
	Benthic	Sex	1	6.500	6.527	0.227	0.636
		Residuals	37	1063.000	28.729		
Weight	Pelagic	Sex	1	0.090	0.090	1.052	0.307
		Residuals	154	13.164	0.085		
	Benthic	Sex	1	0.001	0.001	0.058	0.812
		Residuals	37	0.960	0.026		
Kn	Pelagic	Sex	1	0.6988	0.699	7.644	0.0065
		Error	138	12.6142	0.091		
	Benthic	Sex	1	0.1369	0.1392	6.453	0.0161
		Error	32	0.69	0.02516		

**Table S2:** Two-way analysis of variance on relative condition factor (Kn) and biochemical condition (glucose, protein and lipid) between morphotypes (pelagic, benthic) and sexes (male, female) captured at the locations of Pisco in Peru and Faro Carranza in Chile.

		Df	Sum Sq	Mean Sq	F value	Pr(>F)
Kn	Morphotype	1	0.0003	0.00026	0.0033	0.95435
	Sex	1	0.306	0.3063	3.9133	0.04952
	Morphotype:Sex	1	0.532	0.5316	6.7933	0.00996
	Residuals	170	13.304	0.07826		
Glucose	Morphotype	1	1.043	1.043	38.873	0.000000067
	Sex	1	0.1471	0.1471	5.484	0.0228
	Morphotype:Sex	1	0.0012	0.0012	0.043	0.8357
	Residuals	55	1.4757	0.0268		
Protein	Morphotype	1	76.33	76.33	13.954	0.000447
	Sex	1	2.44	2.44	0.446	0.507071
	Morphotype:Sex	1	0.01	0.01	0.002	0.963211
	Residuals	55	300.84	5.47		
Lipid	Morphotype	1	3.736	3.736	136.37	3.76E-16
	Sex	1	0.005	0.005	0.196	0.66
	Morphotype:Sex	1	0.025	0.025	0.916	0.343
	Residuals	52	1.425	0.027		

**Table S3** One-way analysis of variance between morphotypes (pelagic vs benthic) according to sex (males, females) in relation to their relative condition factor (Kn) and biochemical condition (glucose, proteins, and lipids) in individuals captured at the locations of Pisco in Peru and Faro Carranza in Chile.

			U	Z	p-level		
Kn	Male	Morphotype	577	1.830	0.067		
	Female	Morphotype	239	1.92	0.054		
Sex			Df	Sum Sq	Mean Sq	F value	p-level
Glucose	Male	Morphotype	1	0.6102	0.6102	16.31	0.000328
		Residuals	31	1.1597	0.0374		
	Female	Morphotype	1	0.3849	0.3849	29.24	0.0000149
		Residuals	24	0.316	0.0132		
Protein	Male	Morphotype	1	44.08	44.08	6.869	0.0135
		Residuals	31	198.93	6.42		
	Female	Morphotype	1	33.6	33.6	7.913	0.00963
		Residuals	24	101.9	4.25		
Lipid	Male	Morphotype	1	2.7355	2.736	124.5	2.19E-12
		Residuals	31	0.6809	0.022		
	Female	Morphotype	1	0.9783	0.9783	27.62	0.0000329
		Residuals	21	0.7438	0.0354		

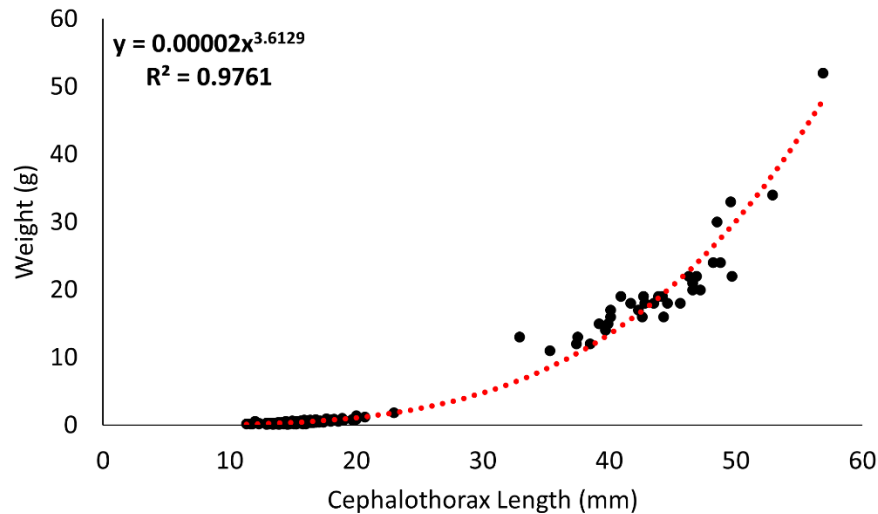


Figure S1. Length–weight relationship of *G. monodon* individuals captured in the HCE during late October of the year 2021.

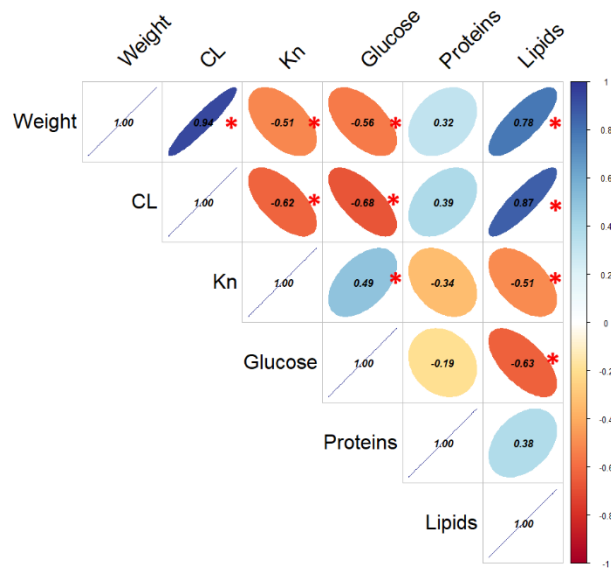


Figure S2: Correlogram among the parameters analyzed (CL, W, Kn, glucose, proteins, lipids) of *G. monodon* individuals captured in the HCE during late October of the year 2021. Asterisk in red (\*) shows statistically significant differences.