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Growth model selection for the jumbo squid *Dosidicus gigas* from the Gulf of California, Mexico

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Table S1. Parameters and confidence intervals estimates by Monte Carlo simulations for different growth models applied to female *Dosidicus gigas*. ρ is the constant relative rate of the relative growth rate; η is the incremental relative rate of the relative growth rate; λ_1 is the length at age τ_1; λ_2 is the length at age τ_2; τ_1 is the first specified age; τ_2 is the second specified age; L_∞ is the average asymptotic length; κ is a dimensionless parameter; μ is the specific rate of growth when $t = t_0$; α, β and δ are parameters without biological value; L_0 corresponds to length at $t = 0$

Model	Parameter	Value	Mean	SE	CV	Bias	%Bias	Lower CI	Upper CI
Schnute ($\rho \neq 0, \eta \neq 0$)	ρ	0.008	0.008	3.3E–04	0.039	5.500E–04	6.490	0.008	0.009
	η	0.143	0.114	0.016	0.142	–0.028	–24.572	0.082	0.145
	λ_1	3.349	3.462	0.056	0.016	0.113	3.264	3.350	3.574
	λ_2	830.933	825.968	11.977	0.015	–4.965	–0.601	800.802	847.147
	τ_1	1	–	–	–	–	–	–	–
	τ_2	450	–	–	–	–	–	–	–
Schnute ($\rho \neq 0, \eta = 0$)	ρ	0.011	0.011	1.3E–04	0.013	–1.5E–05	–0.142	0.010	0.011
	λ_1	3.906	3.933	0.085	0.022	0.027	0.697	3.767	4.092
	λ_2	765.829	773.868	8.439	0.011	8.039	1.039	757.292	790.728
	τ_1	1	–	–	–	–	–	–	–
	τ_2	450	–	–	–	–	–	–	–
Gompertz (L_∞)	L_∞	800.739	800.809	7.557	0.009	797.092	99.536	785.808	815.537
	κ	0.011	0.011	1.4E–04	0.013	–5.349	–50283.937	0.010	0.011
	μ	157.981	158.047	1.881	0.012	158.036	99.993	154.139	161.388
Power	α	0.200	1.605	0.261	0.163	1.404	87.523	1.177	2.198
	β	1.391	0.955	0.032	0.034	–0.436	–45.674	0.892	1.017
Extended power	α	0.415	0.910	0.317	0.348	0.495	54.449	0.285	1.519
	β	1.273	1.104	0.068	0.061	–0.169	–15.278	1.018	1.338

	δ	3.051	1.552	1.423	0.917	–1.499	–96.546	–3.349	3.248
Persistence	α	0.072	0.082	0.005	0.067	0.010	12.261	0.072	0.092
	β	1.585	1.559	0.013	0.009	–0.026	–1.688	1.535	1.587
	δ	–4.215	–4.049	0.286	–0.071	0.166	–4.104	–4.641	–3.523
Gompertz (L_0)	L_0	3.690	3.726	0.083	0.022	0.037	0.981	3.551	3.877
	κ	5.380	5.370	0.020	0.004	–0.010	–0.178	5.333	5.410
	μ	0.011	0.011	1.3E–04	0.013	–1.6E–05	–0.153	0.010	0.011

Table S2. Growth parameters estimated for female *Dosidicus gigas*. τ_0 is age of theoretical zero length; L_∞ is asymptotic length; τ^* is age of growth inflection; L^* is length at age of growth inflection

	θ	**Value**	**Lower CI**	**Upper CI**
Schnute ($\rho \neq 0, \eta \neq 0$)	τ_0	–87.547	–126.152	–63.597
	L_∞	904.805	902.125	914.532
	τ*	167.516	147.004	192.295
	L^*	312.841	306.186	322.113
Schnute ($\rho \neq 0, \eta = 0$)	L_∞	809.476	796.088	821.979
	τ*	158.314	153.564	162.177
	L^*	297.790	292.864	302.389

Table S3. Parameters and confidence intervals estimates by Monte Carlo simulations for different growth models applied to male *Dosidicus gigas*. See Table S1 for parameter definitions

Model	Parameter	Value	Mean	SE	CV	Bias	%Bias	Lower CI	Upper CI
Schnute ($\rho \neq 0, \eta \neq 0$)	ρ	0.009	0.009	4.9E–04	0.053	6.7E–04	7.046	0.008	0.010
	η	0.111	0.076	0.023	0.299	–0.035	–45.929	0.031	0.118
	λ_1	3.378	3.535	0.065	0.018	0.157	4.435	3.398	3.660
	λ_2	776.016	754.265	13.337	0.018	–21.751	–2.884	730.270	780.678
	τ_1	1	–	–	–	–	–	–	–
	τ_2	450	–	–	–	–	–	–	–
Schnute ($\rho \neq 0, \eta = 0$)	ρ	0.011	0.011	1.5E–04	0.013	–1.1E–04	–0.984	0.011	0.011
	λ_1	3.703	3.782	0.080	0.021	0.079	2.087	3.617	3.901
	λ_2	724.994	728.358	5.643	0.008	3.364	0.462	716.732	739.051
	τ_1	1	–	–	–	–	–	–	–
	τ_2	450	–	–	–	–	–	–	–
Gompertz (L_∞)	L_∞	751.603	755.962	7.849	0.010	4.359	0.577	741.030	770.975
	κ	0.011	0.011	1.5E–04	0.014	–1.1E–04	–0.958	0.011	0.011
	μ	151.205	152.372	1.975	0.013	1.167	0.766	148.635	156.368
Power	α	0.214	1.635	0.283	0.173	1.421	86.923	1.167	2.262
	β	1.369	0.930	0.036	0.038	–0.439	–47.234	0.865	1.005
Extended power	α	0.437	0.800	0.257	0.321	0.363	45.418	0.252	1.269
	β	1.253	1.109	0.068	0.062	–0.144	–13.008	1.040	1.384
	δ	2.982	1.015	1.548	1.525	–1.967	–193.729	–4.635	2.476

Persistence	α	0.074	0.085	0.006	0.076	0.011	12.947	0.073	0.098
	β	1.575	1.547	0.015	0.010	–0.029	–1.849	1.518	1.578
	δ	–4.190	–4.012	0.313	–0.078	0.177	–4.419	–4.669	–3.454
Gompertz (L_0)	L_0	3.489	3.572	0.081	0.023	0.083	2.331	3.410	3.731
	κ	5.373	5.355	0.021	0.004	–0.018	–0.332	5.313	5.395
	μ	0.011	0.011	1.5E–04	0.014	–1.0E–04	–0.916	0.011	0.011

Table S4. Growth parameters estimated for male *Dosidicus gigas*. See Table S2 for parameter definitions

	θ	**Value**	**Lower CI**	**Upper CI**
Schnute ($\rho \neq 0, \eta \neq 0$)	τ_0	–113.244	–217.946	–69.860
	L_∞	828.496	825.439	852.711
	τ^*	158.986	133.252	191.019
	L^*	292.860	284.742	308.904
Schnute ($\rho \neq 0, \eta = 0$)	L_∞	755.996	750.895	761.773
	τ^*	152.372	147.688	157.040
	L^*	278.115	276.239	280.241

Table S5. Growth parameters estimated for males and females of *Dosidicus gigas*. See Table S2 for parameter definitions

	θ	Value	Lower CI	Upper CI
Schnute ($\rho \neq 0, \eta \neq 0$)	τ_0	–94.15	–125.58	–72.20
	L_∞	859.45	857.32	862.17
	τ^*	162.36	146.34	180.08
	L^*	299.52	294.44	304.72
Schnute ($\rho \neq 0, \eta = 0$)	L_∞	786.26	781.71	790.36
	τ^*	156.53	152.92	159.85
	L^*	289.25	287.58	290.76

Table S6. Parameters and confidence intervals estimates by Monte Carlo simulations for different growth models applied to males and females of *Dosidicus gigas*. See Table S1 for parameter definitions

Model	Parameter	Value	Mean	SE	CV	Bias	%Bias	Lower CI	Upper CI
Schnute ($\rho \neq 0, \eta \neq 0$)	ρ	0.008	0.009	2.6E–04	0.029	–2.5E–04	–2.791	0.008	0.009
	η	0.128	0.101	0.013	0.126	0.012	11.480	0.076	0.126
	λ_1	3.330	3.420	0.047	0.014	0.016	0.470	3.333	3.521
	λ_2	804.946	796.113	8.747	0.011	30.732	3.860	777.826	810.319
	τ_1	1	–	–				–	–
	τ_2	450	–	–				–	–
Schnute ($\rho \neq 0, \eta = 0$)	ρ	0.011	0.011	1.0E–04	0.010	8.1E–05	0.756	0.011	0.011
	λ_1	3.934	3.908	0.069	0.018	–0.027	–0.679	3.782	4.051
	λ_2	756.299	753.229	3.753	0.005	–3.070	–0.408	745.792	760.340
	τ_1	1	–	–				–	–
	τ_2	450	–	–				–	–
Gompertz (L_∞)	L_∞	790.708	786.385	5.296	0.007	–4.323	–0.550	776.669	796.736
	κ	0.011	0.011	1.0E–04	0.010	8.0E–05	0.743	0.011	0.011
	μ	157.692	156.570	1.428	0.009	–1.122	–0.717	153.866	159.441
Power	α	0.195	1.465	0.212	0.145	1.270	86.665	1.136	1.965
	β	1.402	1.001	0.028	0.028	–0.401	–40.086	0.947	1.055
Extended power	α	0.422	1.213	0.485	0.400	0.791	65.197	0.656	2.897
	β	1.277	1.079	0.060	0.056	–0.198	–18.331	0.956	1.188
	δ	3.250	3.141	1.357	0.432	–0.109	–3.473	0.940	6.219

Persistence	α	0.075	0.085	0.005	0.055	0.009	10.863	0.076	0.094
	β	1.577	1.555	0.010	0.007	–0.022	–1.430	1.535	1.575
	δ	–4.139	–3.979	0.236	–0.059	0.160	–4.023	–4.472	–3.529
Gompertz (L_0)	L_0	3.717	3.693	0.064	0.017	–0.024	–0.648	3.572	3.823
	κ	5.360	5.362	0.015	0.003	0.002	0.031	5.331	5.391
	μ	0.011	0.011	9.9E–05	0.009	7.1E–05	0.661	0.011	0.011