Table S2.1 Maximum-likelihood parameter estimates for Elapidae brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c] B.E.B
M0 (One ratio)	-694.206382	0.49	$= \omega_0$		-
M1 (Neutral)	-673.832213	0.43	P_0: 0.578 $\omega 0$: 0.02 P_1: 0.421 $\omega 1$: 1.0		-
M2 (Selection)*	-669.684563	0.92	P_0: 0.511 ω_0: 0.02 P_1: 0.366 ω_1:1.0 P_2: 0.121 ω_2:4.59	$P < 0.05$	0 ($PP \geq 0.99$) 1 ($P \geq 0.95$)
M3 (Discrete)*	-669.242390	0.79	P_0: 0.471 ω_0: 0.0 P_1: 0.391 ω_1: 0.67 P_2: 0.137 ω_2: 3.84	$P << 0.001$	-
M7 (beta)	-673.779182	0.42	p: 0.02013 q: 0.02583		-
M8 (beta and ω)*	-669.558752	0.84	p_0: 0.873 p: 0.082 q: 0.143 p1: 0.126 ω: 4.18	$P < 0.05$	1 ($PP \geq 0.99$) 3 ($P > 0.95$)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

Table S2.2 Maximum-likelihood parameter estimates for Viperidae brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c]
					B.E.B
M0 (One ratio)	-787.105320	0.31	$= \omega_0$		-
M1 (Neutral)	-768.396299	0.71	P_0: 0.289 ω0: 0.001 P_1: 0.710 ω1:1.0		-
M2 (Selection)*	-768.396299	0.71	P_0: 0.289 ω_0: 0.001 P_1: 0.499 ω_1:1.0 P_2: 0.210 ω_2:1.0	$P > 0.05^{N.S}$	0 (PP ≥ 0.99) 0 (P ≥ 0.95)
M3 (Discrete)*	-761.777562	0.41	P_0: 0.250 ω_0: 0.0 P_1: 0.264 ω_1: 0.10 P_2: 0.484 ω_2: 0.80	$P << 0.001$	-
M7 (beta)	-763.149655	0.44	p: 0.18348 q: 0.22677 p_0: 0.999		-
M8 (beta and ω)*	-763.149658	0.44	p: 0.183 q: 0.226 p1: 0.00001 ω: 1.0	$P > 0.05^{N.S}$	0 (PP ≥ 0.99) 0 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

$P > 0.05^{N.S}$: Not significant at 0.05

Table S2.3 Maximum-likelihood parameter estimates for 'non-front-fanged' advanced snake brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c]
					B.E.B
M0 (One ratio)	-744.714302	1.88	$= \omega_0$		-
M1 (Neutral)	-741.684732	0.70	P_0: 0.292 ω0: 0.0 P_1: 0.707 ω1: 1.0		-
M2 (Selection)*	-731.444226	2.24	P_0: 0.239 ω_0: 0.0 P_1: 0.370 ω_1:1.0 P_2: 0.390 ω_2: 4.78	P << 0.001	3 (PP ≥ 0.99) 2 (P ≥ 0.95)
M3 (Discrete)*	-729.662821	2.60	P_0: 0.343 ω_0: 0.0 P_1: 0.592 ω_1: 2.93 P_2: 0.064 ω_2: 13.44	P << 0.001	-
M7 (beta)	-741.689003	0.70	p: 0.01169 q: 0.00500		-
M8 (beta and ω)*	-731.500666	2.25	p_0: 0.561 p: 0.005 q: 0.005 p1: 0.438 ω: 4.51	P << 0.001	4 (PP ≥ 0.99) 5 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

Table S2.4 Maximum-likelihood parameter estimates for Typhlopoidea brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c]
					B.E.B
M0 (One ratio)	-744.714302	1.88	$= \omega_0$		-
M1 (Neutral)	-741.684732	0.70	P_0: 0.292 ω0: 0.0 P_1: 0.707 ω1: 1.0		-
M2 (Selection)*	-731.444226	2.24	P_0: 0.239 ω_0: 0.0 P_1: 0.370 ω_1:1.0 P_2: 0.390 ω_2: 4.78	P << 0.001	3 (PP ≥ 0.99) 2 (P ≥ 0.95)
M3 (Discrete)*	-729.662821	2.60	P_0: 0.343 ω_0: 0.0 P_1: 0.592 ω_1: 2.93 P_2: 0.064 ω_2: 13.44	P << 0.001	-
M7 (beta)	-741.689003	0.70	p: 0.01169 q: 0.00500		-
M8 (beta and ω)*	-731.500666	2.25	p_0: 0.561 p: 0.005 q: 0.005 p1: 0.438 ω: 4.51	P << 0.001	4 (PP ≥ 0.99) 5 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

Table S2.5 Maximum-likelihood parameter estimates for Boidae (Henophidia) brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c]
					B.E.B
M0 (One ratio)	-744.714302	1.88	$= \omega_0$		-
M1 (Neutral)	-741.684732	0.70	P_0: 0.292 $\omega 0$: 0.0 P_1: 0.707 $\omega 1$: 1.0		-
M2 (Selection)*	-731.444226	2.24	P_0: 0.239 ω_0: 0.0 P_1: 0.370 ω_1:1.0 P_2: 0.390 ω_2: 4.78	P << 0.001	3 (PP ≥ 0.99) 2 (P ≥ 0.95)
M3 (Discrete)*	-729.662821	2.60	P_0: 0.343 ω_0: 0.0 P_1: 0.592 ω_1: 2.93 P_2: 0.064 ω_2: 13.44	P << 0.001	-
M7 (beta)	-741.689003	0.70	p: 0.01169 q: 0.00500 p_0: 0.561		-
M8 (beta and ω)*	-731.500666	2.25	p: 0.005 q: 0.005 p1: 0.438 ω: 4.51	P << 0.001	4 (PP ≥ 0.99) 5 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

Table S2.6 Maximum-likelihood parameter estimates for Pythonidae (Henophidia) brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c]
					B.E.B
M0 (One ratio)	-744.714302	1.88	$= \omega_0$		-
M1 (Neutral)	-741.684732	0.70	P_0: 0.292 ω0: 0.0 P_1: 0.707 ω1: 1.0		-
M2 (Selection)*	-731.444226	2.24	P_0: 0.239 ω_0: 0.0 P_1: 0.370 ω_1:1.0 P_2: 0.390 ω_2: 4.78	P << 0.001	3 (PP ≥ 0.99) 2 (P ≥ 0.95)
M3 (Discrete)*	-729.662821	2.60	P_0: 0.343 ω_0: 0.0 P_1: 0.592 ω_1: 2.93 P_2: 0.064 ω_2: 13.44	P << 0.001	-
M7 (beta)	-741.689003	0.70	p: 0.01169 q: 0.00500 p_0: 0.561		-
M8 (beta and ω)*	-731.500666	2.25	p: 0.005 q: 0.005 p1: 0.438 ω: 4.51	P << 0.001	4 (PP ≥ 0.99) 5 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

Table S2.7 Maximum-likelihood parameter estimates for Iguania brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c]
					B.E.B
M0 (One ratio)	-744.714302	1.88	$= \omega_0$		-
M1 (Neutral)	-741.684732	0.70	P_0: 0.292 ω0: 0.0 P_1: 0.707 ω1: 1.0		-
M2 (Selection)*	-731.444226	2.24	P_0: 0.239 ω_0: 0.0 P_1: 0.370 ω_1:1.0 P_2: 0.390 ω_2: 4.78	P << 0.001	3 (PP ≥ 0.99) 2 (P ≥ 0.95)
M3 (Discrete)*	-729.662821	2.60	P_0: 0.343 ω_0: 0.0 P_1: 0.592 ω_1: 2.93 P_2: 0.064 ω_2: 13.44	P << 0.001	-
M7 (beta)	-741.689003	0.70	p: 0.01169 q: 0.00500		-
M8 (beta and ω)*	-731.500666	2.25	p_0: 0.561 p: 0.005 q: 0.005 p1: 0.438 ω: 4.51	P << 0.001	4 (PP ≥ 0.99) 5 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

Table S2.8 Maximum-likelihood parameter estimates for Anguimorpha brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c]
					B.E.B
M0 (One ratio)	-744.714302	1.88	$= \omega_0$		-
M1 (Neutral)	-741.684732	0.70	P_0: 0.292 ω0: 0.0 P_1: 0.707 ω1: 1.0		-
M2 (Selection)*	-731.444226	2.24	P_0: 0.239 ω_0: 0.0 P_1: 0.370 ω_1:1.0 P_2: 0.390 ω_2: 4.78	P << 0.001	3 (PP ≥ 0.99) 2 (P ≥ 0.95)
M3 (Discrete)*	-729.662821	2.60	P_0: 0.343 ω_0: 0.0 P_1: 0.592 ω_1: 2.93 P_2: 0.064 ω_2: 13.44	P << 0.001	-
M7 (beta)	-741.689003	0.70	p: 0.01169 q: 0.00500 p_0: 0.561		-
M8 (beta and ω)*	-731.500666	2.25	p: 0.005 q: 0.005 p1: 0.438 ω: 4.51	P << 0.001	4 (PP ≥ 0.99) 5 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

Table S2.9 Maximum-likelihood parameter estimates for crocodilian brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c]
					B.E.B
M0 (One ratio)	-744.714302	1.88	$= \omega_0$		-
M1 (Neutral)	-741.684732	0.70	P_0: 0.292 ω0: 0.0 P_1: 0.707 ω1: 1.0		-
M2 (Selection)*	-731.444226	2.24	P_0: 0.239 ω_0: 0.0 P_1: 0.370 ω_1:1.0 P_2: 0.390 ω_2: 4.78	P << 0.001	3 (PP ≥ 0.99) 2 (P ≥ 0.95)
M3 (Discrete)*	-729.662821	2.60	P_0: 0.343 ω_0: 0.0 P_1: 0.592 ω_1: 2.93 P_2: 0.064 ω_2: 13.44	P << 0.001	-
M7 (beta)	-741.689003	0.70	p: 0.01169 q: 0.00500		-
M8 (beta and ω)*	-731.500666	2.25	p_0: 0.561 p: 0.005 q: 0.005 p1: 0.438 ω: 4.51	P << 0.001	4 (PP ≥ 0.99) 5 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

Table S2.10 Maximum-likelihood parameter estimates for turtle brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c] B.E.B
M0 (One ratio)	-744.714302	1.88	$= \omega_0$		-
M1 (Neutral)	-741.684732	0.70	P_0: 0.292 ω0: 0.0 P_1: 0.707 ω1: 1.0		-
M2 (Selection)*	-731.444226	2.24	P_0: 0.239 ω_0: 0.0 P_1: 0.370 ω_1:1.0 P_2: 0.390 ω_2: 4.78	P << 0.001	3 (PP ≥ 0.99) 2 (P ≥ 0.95)
M3 (Discrete)*	-729.662821	2.60	P_0: 0.343 ω_0: 0.0 P_1: 0.592 ω_1: 2.93 P_2: 0.064 ω_2: 13.44	P << 0.001	-
M7 (beta)	-741.689003	0.70	p: 0.01169 q: 0.00500		-
M8 (beta and ω)*	-731.500666	2.25	p_0: 0.561 p: 0.005 q: 0.005 p1: 0.438 ω: 4.51	P << 0.001	4 (PP ≥ 0.99) 5 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$

Table S2. 11 Maximum-likelihood parameter estimates for mammalian brain-derived neurotrophic factor

Model	Likelihood (ι)	ω_0[a]	Parameters	Sign.[b]	No. of Sites with $\omega > 1$[c]
					B.E.B
M0 (One ratio)	-744.714302	1.88	$= \omega_0$		-
M1 (Neutral)	-741.684732	0.70	P_0: 0.292 $\omega 0$: 0.0 P_1: 0.707 $\omega 1$: 1.0		-
M2 (Selection)*	-731.444226	2.24	P_0: 0.239 ω_0: 0.0 P_1: 0.370 ω_1:1.0 P_2: 0.390 ω_2: 4.78	P << 0.001	3 (PP ≥ 0.99) 2 (P ≥ 0.95)
M3 (Discrete)*	-729.662821	2.60	P_0: 0.343 ω_0: 0.0 P_1: 0.592 ω_1: 2.93 P_2: 0.064 ω_2: 13.44	P << 0.001	-
M7 (beta)	-741.689003	0.70	p: 0.01169 q: 0.00500 p_0: 0.561		-
M8 (beta and ω)*	-731.500666	2.25	p: 0.005 q: 0.005 p1: 0.438 ω: 4.51	P << 0.001	4 (PP ≥ 0.99) 5 (P > 0.95)

Legend:

a: dn/ds (weighted average)

b: Significance of the model in comparison with the null model

c: Number of sites with $\omega > 1$ under the Bayes empirical Bayes approach with a posterior probability (PP) more than or equal to 0.99 and 0.95

***** Models which allow $\omega > 1$