Inpp5f_v2-Vma21 family codon evolution results

Model	omega used	lnL	P	Estimates of parameters
M0 : one ratio	0	-2039.75	1	$\omega = 0.10$
Site-specific:				
M1:Neutral	0	-2039.75	2	$p_0 = 0.99$, $\omega_0 = 0.10$
M2:Selection	0	-2039.75	4	$p_0 = 1$, $p_1 = 0$ $\omega_0 = 0.10$, $\omega_1 = 1$
M3:Discrete(K = 2)	**0**	**-2024.97**	**3**	**$p_0 = 049$, ($p_1 = 0.51$)** **$\omega_0 = 0.02$, $\omega_1 = 0.19$**
M3:Discrete(K = 3)	0	-2024.97	5	$p_0 = 0.49$, $p_1 = 0.51$ $\omega_0 = 0.02$, $\omega_1 = 0.19$
M7: Beta	0	-2025.79	2	$p = 0.95$, $q = 7.83$
M8: Beta&Omega > 1	0	-2025.79	4	$p_0 = 0.99$, $p = 0.95$, $q = 7.83$ ($p_1 = 0.00001$), $\omega = 1$
M8a: Beta&Omega = 1	1	-2025.79	3	$p_0 = 0.99$, $p = 0.95$, $q = 7.83$ ($p_1 = ?$), $\omega = 1$
Branch-specific				
Model A	0	-2029.53	4	$p_0 = 0.40$, $p_1 = 0$, ($p_2 = 0.60$, $p_3 = 0$), $\omega_0 = 0.09$, $\omega_1 = 1$, $\omega_2 = 1$
Model A null	1	-2029.53	3	$p_0 = 0.40$, $p_1 = 0$, ($p_2 = 0.60$, $p_3 = 0$), $\omega_0 = 0.09$, $\omega_1 = 1$, $\omega_2 = 1$
Model B	**0**	**-2020.32**	**5**	**$p_0 = 0.23$, $p_1 = 0.22$, $p_2 = 0.28$, $p_3 = 0.27$** **Foreground:** **$\omega_0 = 0.01$, $\omega_1 = 0.19$, $\omega_2 = 0.80$, $\omega_3 = 0.80$** **Background:** **$\omega_0 = 0.01$, $\omega_1 = 0.19$, $\omega_2 = 0.01$, $\omega_3 = 0.19$**

Comparison	*df*	*Δl*	Critical χ^2 values
M0 v M3k2	**2**	**2(2039.75-2024.97)=29.56***	**≥ 5.99**
M3k2 v M3k3	-	1(2024.97-2024.97)=0	≥ 1.00
M1 v M2	2	2(2039.75-2039.75)=0	≥ 5.99
M7 v M8	2	2(2025.79-2025.79)=0	≥ 5.99
M8 v M8a	1	2(2025.79-2025.79)=0	≥ 2.71 (@5%) ≥ 5.41 (@1%)
M1 v Model A	2	2(2039.75-2029.53)=20.44*	≥ 5.99
Model A v Model A null	1	2(2029.53-2029.53)=0	≥ 3.84 (@5%)
M3k2 v Model B	**2**	**2(2024.97-2020.32)=9.3***	**≥ 5.99**

Mcts family codon evolution results

Model	omega used	lnL	P	Estimates of parameters
M0 : one ratio	0	-2554.31	1	$\omega = 0.04$
Site-specific				
M1:Neutral	0	-2539.00	2	$p_0 = 0.96$, $\omega_0 < 0.03$
M2:Selection	0	-2539.00	4	$p_0 = 0.96$, $p_1 = 0.04$ $\omega_0 = 0.03$, $\omega_1 = 1$
M3:Discrete(K = 2)	**0**	**-2528.13**	**3**	**$p_0 = 0.89$, ($p_1 = 0.11$)** **$\omega_0 = 0.01$, $\omega_1 = 0.27$**
M3:Discrete(K = 3)	0	-2527.49	5	$p_0 = 0.52$, $p_1 = 0.41$, ($p_2 = 0.07$) $\omega_0 = 0$, $\omega_1 = 0.05$, $\omega_2 = 0.34$
M7: Beta	0	-2528.36	2	$p = 0.19$, $q = 3.65$
M8: Beta&Omega > 1	0	-2525.36	4	$p_0 = 0.10$, $p = 0.185$, $q = 3.66$ ($p_1 = 0.00001$), $\omega = 1.00$
M8a: Beta&Omega = 1	1	-2528.36	3	$p_0 = 0.99$, $p = 0.19$, $q = 3.66$ ($p_1 = 0.00001$), $\omega = 1$
Branch-specific				Values for Foreground
Model A	0	-2536.79	4	$p_0 = 0.003$, $p_1 = 0.00001$, ($p_2 = 0.96$, $p_3 = 0.04$), $\omega_0 = 0.02$, $\omega_1 = 1$, $\omega_2 = 1.00$
Model A null	1	-2536.79	3	$p_0 = 0.0006$, $p_1 = 0.00003$, ($p_2 = 0.96$, $p_3 = 0.04$), $\omega_0 = 0.02$, $\omega_1 = 1$, $\omega_2 = 1$
Model B	0	-2525.16	5	$p_0 = 0.00$, $p_1 = 0.00$, ($p_2 = 0.88$, $p_3 = 0.11$), $\omega_0 = 0.1$, $\omega_1 = 0.26$, $\omega_2 = 2.73$

Comparison	*df*	*Δl*	Critical χ^2 values
M0 v M3k2	**2**	**2(2554.31-2528.13)=52.36***	**≥ 5.99**
M3k2 v M3k3	-	1(2528.13-2527.49)=0.64	≥ 1.00
M1 v M2	2	2(2539.00-2539.00)=0	≥ 5.99
M7 v M8	2	2(2528.36-2525.36)=0	≥ 5.99
M8 v M8a	1	2(2528.36-2525.36)=0	≥ 2.71 (@5%) ≥ 5.41 (@1%)
M1 v Model A	2	2(2539.00-2536.79)=4.42	≥ 5.99
Model A v Model A null	1	2(2536.79-2539.79)=0	≥ 3.84 (@5%)
M3k2 v Model B	2	2(2528.13-2525.16)=5.94	≥ 5.99

Nap1l family codon evolution results

Model	omega used	lnL	P	Estimates of parameters
M0 : one ratio	0	-12832.55	1	$\omega = 0.19$
Site-specific:				
M1:Neutral	0	-12733.70	2	$p_0= 0.75$, , $p_1=0.25$ $\omega_0=0.13$, $\omega_1=1$
M2:Selection	0	-12733.70	4	$p_0= 0.75$, $p_1= 0.26$ $\omega_0=0.14$, $\omega_1 = 1$
M3:Discrete(K = 2)	**0**	**-12667.28**	**3**	**$p_0= 0.50$, $p_1= 0.50$ $\omega_0= 0.06$, $\omega_1= 0.38$**
M3:Discrete(K = 3)	0	-12667.28	5	$p_0= 0.50$, $p_1= 0.50$ $\omega_0= 0.06$, $\omega_1=0.38$
M7: Beta	0	-12663.91	2	$p= 0.94$, $q= 3.27$
M8: Beta&Omega > 1	0	-12663.91	4	$p_0= 0.99$, $p = 0.94$, $q = 3.27$ $(p_1= 0.01)$, $\omega =1$
M8a: Beta&Omega = 1	1	-12663.91	3	$p_0= 0.99$, $p = 0.94$, $q = 3.27$ $(p_1= 0.01)$, $\omega = 1$
Branch-specific				
Model A	0	-12727.76	4	$p_0 = 0.47$, $p_1 = 0.15$, $p_2 = 0.38$, $\omega_0 = 0.13$, $\omega_1 = 1$, $\omega_2 = 2.22$
Model A null	1	-12728.61	3	$p_0 = 0.45$, $p_1 =0.15$, $p_2 = 0.31$, $\omega_0 = 0.13$, $\omega_1 = 1$, $\omega_2 = 1$
Model B	0	-12664.50	5	$p_0 = 0.33$, $p_1 = 0.33$, $p_2 = 0.34$, $\omega_0 = 0.06$, $\omega_1 = 0.37$, $\omega_2 = 1.07$

Comparison	*df*	*Δl*	Critical χ^2 values
M0 v M3k2	**2**	**2(12832.55-12667.28)=330.54***	**≥ 5.99**
M3k2 v M3k3	-	1(12667.28-12667.28)=0	≥ 1.00
M1 v M2	2	2(12733.70-12633.70)=0	≥ 5.99
M7 v M8	2	2(12663.91-12663.91)=0	≥ 5.99
M8 v M8a	1	2(12663.91-12993.91)=0	≥ 2.71 (@5%) ≥ 5.41 (@1%)
M1 v Model A	2	2(12733.70-12727.76)=11.88*	≥ 5.99
Model A v Model A null	1	2(12727.76-12728.61)=-1.7	≥ 3.84 (@5%)
M3k2 v Model B	2	2(12667.28-12664.50)=5.56	≥ 5.99

U2af1-rs family codon evolution results

Model	omega used	lnL	P	Estimates of parameters
M0 : one ratio	0	-7449.37	1	$\omega = 0.14$
Site-specific:	0	-7304.01		
M1:Neutral			2	$p_0 = 0.83$, $\omega_0 < 1$
M2:Selection	0	-7302.37	4	$p_0 = 0.83$, $p_1 = 0.16$ ($p_2 = 0.008$), $\omega_0 < 0.074$, $\omega_1 = 1$, $\omega_2 = 38.93$
M3:Discrete(K = 2)	0	-7302.16	3	$p_0 = 0.80$, ($p_1 = 0.20$) $\omega_0 = 0.06$, $\omega_1 = 0.78$
M3:Discrete(K = 3)	**2**	**-7293.06**	**5**	**$p_0 = 0.58$, $p_1 = 0.31$, ($p_2 = 0.10$) $\omega_0 = 0.033$, $\omega_1 = 0.24$, $\omega_2 = 1.30$**
M7: Beta	0	-7307.48	2	$p = 0.32$, $q = 1.32$
M8: Beta&Omega > 1	0	-7293.27	4	$p_0 = 0.90$, $p = 0.68$, $q = 5.46$ ($p_1 = 0.100$), $\omega = 1.31$
M8a: Beta&Omega = 1	1	-7294.55	3	$p_0 = 0.87$, $p = 0.80$, $q = 7.49$ ($p_1 = 0.13$), $\omega = 1$
Branch-specific				
Model A	0	-7286.39	4	$p_0 = 0.77$, $p_1 = 0.16$, ($p_2 = 0.06$, $p_3 = 0.01$), $\omega_0 = 0.06$, $\omega_1 = 1$, $\omega_2 = 3.91$, $\omega_3 = 3.91$
Model A null	1	-7289.73	3	$p_0 = 0.72$, $p_1 = 0.14$, ($p_2 = 0.11$, $p_3 = 0.02$), $\omega_0 = 0.06$, $\omega_1 = 1$, $\omega_2 = 1$
Model B	**0**	**-7284.63**	**5**	**$p_0 = 0.74$, $p_1 = 0.18$, $p_2 = 0.06$, $p_3 = 0.01$ Foreground: $\omega_0 = 0.06$, $\omega_1 = 0.79$, $\omega_2 = 3.74$, $\omega_3 = 3.74$ Background: $\omega_0 = 0.06$, $\omega_1 = 0.79$, $\omega_2 = 0.06$, $\omega_3 = 0.78$**

Comparison	*df*	*Δl*	Critical χ^2 values
M0 v M3k2	2	2(7449.37-7302.16)=294.42*	≥ 5.99
M3k2 v M3k3	-	1(7302.16-7293.06)=9.1*	≥ 1.00
M1 v M2	2	2(7304.01-7302.37)=3.28	≥ 5.99
M7 v M8	2	2(7307.48-7293.27)=29.06*	≥ 5.99
M8 v M8a	1	2(7293.27-7294.35)=2.56	≥ 2.71 (@5%) ≥ 5.41 (@1%)
M1 v Model A	2	2(7304.01-7286.39)=35.42*	≥ 5.99
Model A v Model A null	1	2(7289.73-7286.39)=6.68*	≥ 3.84 (@5%)
M3k2 v Model B	**2**	**2(7302.16-7284.63)=107.06***	**≥ 5.99**