

**Phylogenetic Generalized Least Square (PGLS) Analyses, Primate Dataset (N=155)**

<b>Call</b>	<b>Lambda</b>	<b>Intercept</b>	<b>Slope</b>	<b>Adjusted R-squared</b>	<b>p-value</b>	<b>Sample size</b>
LogLS ~ LogG	1.000	0.846825	-0.367564	0.1107	<b>0.0001214</b>	120
LogLS ~ LogML	1.000	0.121217	-0.042479	0.002752	0.2494	124
LogLS ~ ML	1.000	0.06903496	-0.00031158	-0.003912	0.4719	124
LS ~ ML	1.000	1.2244236	-0.0011492	-0.003044	0.4301	124
LogLS ~ LogAW	1.000	0.074201	-0.011529	-0.00219	0.4136	151
LogLS ~ LogBrain	1.000	0.093679	-0.044213	0.01739	0.06711	137
LogLS ~ LogPGR	1.000	0.033493	-0.061376	0.02589	0.06254	97
LogLS ~ LogBBR	1.000	0.0036346	-0.0205511	-0.00217	0.4024	137
LogLS ~ BBR	1.000	0.047953	-0.418883	-0.003785	0.4864	137
LogLS ~ EQ	1.000	0.0493281	-0.0062038	0.0003352	0.3084	137
LogAW ~ LogBrain	0.845	1.531256	1.189017	0.753	<b>&lt; 2.2e-16</b>	137
LogBrain ~ LogAW	0.914	-0.591126	0.607373	0.7107	<b>&lt; 2.2e-16</b>	137
LogAW ~ LogML	0.955	2.25039	0.70252	0.05537	<b>0.00491</b>	124
LogAW ~ LogG	0.953	-0.96464	1.80601	0.08875	<b>0.0005576</b>	120
LogAW ~ LogPGR	0.660	3.405221	1.271542	0.632	<b>&lt; 2.2e-16</b>	97
LogAW ~ LogBBR	0.988	0.975840	-1.137380	0.5206	<b>&lt; 2.2e-16</b>	137
LogAW ~ EQ	0.991	3.128052	-0.097092	0.06102	<b>0.002098</b>	137
LogG ~ LogBrain	0.966	2.037712	0.121734	0.1931	<b>1.044e-06</b>	109
LogG ~ LogML	0.981	2.061077	0.092797	0.02596	0.0507	110
LogG ~ LogPGR	0.982	2.196472	0.042242	0.01376	0.1294	97
LogG ~ LogBBR	0.986	2.2048339	0.0093397	-0.008399	0.7518	109

Call	Lambda	Intercept	Slope	Adjusted R-squared	p-value	Sample size
LogBrain ~ LogML	0.974	0.51277	0.64228	0.1207	<b>0.0001035</b>	112
LogBrain ~LogPGR	0.841	1.517949	0.881683	0.6215	<b>&lt; 2.2e-16</b>	90
LogBBR~ LogBrain	0.845	-1.531256	-0.189017	0.06532	0.0015	137
EQ ~ LogBrain	0.662	0.20624	1.08618	0.1914	<b>5.376e-08</b>	137
LogML ~ LogPGR	0.715	1.510051	0.260417	0.2859	<b>2.405e-08</b>	92
LogML ~ LogBBR	0.949	1.541035	0.044323	-0.004429	0.4764	112
LogML ~ EQ	0.902	1.359893	0.059295	0.1419	<b>2.516e-05</b>	112
LogPGR ~LogBBR	0.985	-0.69394	-0.21420	0.0337	<u>0.04582</u>	90
EQ ~ LogPGR	0.038	1.85731	0.89814	0.2493	<b>3.279e-07</b>	90
LogBBR ~ EQ	0.991	-2.060926	0.195592	0.6631	<b>&lt; 2.2e-16</b>	137

## LogLS & LogG

Call:

pgls(formula = LogLS ~ LogG, data = primate, lambda = "ML")

Residuals:

```

      Min      1Q  Median      3Q      Max
-0.088817 -0.010366 -0.000868  0.008572  0.078541

```

Branch length transformations:

```

kappa [Fix] : 1.000
lambda [ ML] : 1.000
  lower bound : 0.000, p = < 2.22e-16
  upper bound : 1.000, p = 1
  95.0% CI   : (0.993, NA)
delta [Fix] : 1.000

```

Coefficients:

```

      Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.846825   0.217735  3.8892 0.0001668 ***
LogG        -0.367564   0.092453 -3.9757 0.0001214 ***
---

```

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.02101 on 118 degrees of freedom

Multiple R-squared: 0.1181, Adjusted R-squared: 0.1107

F-statistic: 15.81 on 1 and 118 DF, p-value: 0.0001214

### LogLS & LogML

Call:

```
pgls(formula = LogLS ~ LogML, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.057168	-0.013863	-0.001327	0.007508
Max			
0.087169			

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 1.000

lower bound : 0.000, p = < 2.22e-16

upper bound : 1.000, p = 1

95.0% CI : (0.997, NA)

delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error
(Intercept)	0.121217	0.104730
LogML	-0.042479	0.036703
t value Pr(> t )		
(Intercept)	1.1574	0.2494
LogML	-1.1574	0.2494

Residual standard error: 0.02111 on 122 degrees of freedom

Multiple R-squared: 0.01086, Adjusted R-squared: 0.002752

F-statistic: 1.339 on 1 and 122 DF, p-value: 0.2494

### LogLS & ML

Call:

```
pgls(formula = LogLS ~ ML, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.056933	-0.014292	-0.000824	0.007273

Max  
0.087295

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 1.000  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 1  
95.0% CI : (0.997, NA)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error
(Intercept)	0.06903496	0.09136551
ML	-0.00031158	0.00043179

  

	t value	Pr(> t )
(Intercept)	0.7556	0.4514
ML	-0.7216	0.4719

Residual standard error: 0.02119 on 122 degrees of freedom  
Multiple R-squared: 0.00425, Adjusted R-squared: -0.003912  
F-statistic: 0.5207 on 1 and 122 DF, p-value: 0.4719

## LS & ML

Call:

pgls(formula = LS ~ ML, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.188234	-0.048909	-0.002971	0.025613

Max  
0.287259

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 1.000  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 1  
95.0% CI : (0.996, NA)  
delta [Fix] : 1.000

Coefficients:

Estimate	Std. Error
----------	------------

```
(Intercept) 1.2244236 0.3071618
ML          -0.0011492 0.0014516
           t value Pr(>|t|)
```

```
(Intercept) 3.9862 0.0001148 ***
ML          -0.7916 0.4301134
```

---

Signif. codes:

```
0 '***' 0.001 '**' 0.01 '*' 0.05
'.' 0.1 ' ' 1
```

Residual standard error: 0.07122 on 122 degrees of freedom

Multiple R-squared: 0.00511, Adjusted R-squared: -0.003044

F-statistic: 0.6267 on 1 and 122 DF, p-value: 0.4301

### LogLS & LogAW

Call:

```
pgls(formula = LogLS ~ LogAW, data = primate, lambda = "ML")
```

Residuals:

```
      Min      1Q   Median      3Q      Max
-0.070803 -0.008751 -0.000025  0.006646
0.074900
```

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 1.000

lower bound : 0.000, p = < 2.22e-16

upper bound : 1.000, p = 1

95.0% CI : (0.997, NA)

delta [Fix] : 1.000

Coefficients:

```
      Estimate Std. Error
(Intercept) 0.074201 0.087865
LogAW       -0.011529 0.014062
           t value Pr(>|t|)
(Intercept) 0.8445 0.3997
LogAW      -0.8199 0.4136
```

Residual standard error: 0.02025 on 149 degrees of freedom

Multiple R-squared: 0.004491, Adjusted R-squared: -0.00219

F-statistic: 0.6722 on 1 and 149 DF, p-value: 0.4136

## LogLS & LogBrain

Call:

```
pgls(formula = LogLS ~ LogBrain, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.072056	-0.006088	0.000621	0.005812
Max			
0.068412			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 1.000  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 1  
95.0% CI : (0.997, NA)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error
(Intercept)	0.093679	0.082939
LogBrain	-0.044213	0.023953

t value Pr(>|t|)

(Intercept)	1.1295	0.26069
LogBrain	-1.8458	0.06711 .

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.02034 on 135 degrees of freedom

Multiple R-squared: 0.02462, Adjusted R-squared: 0.01739

F-statistic: 3.407 on 1 and 135 DF, p-value: 0.06711

## LogLS & LogPGR

Call:

```
pgls(formula = LogLS ~ LogPGR, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.070886	-0.010195	-0.000751	0.007482
Max			
0.075328			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 1.000  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 1  
95.0% CI : (0.994, NA)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error
(Intercept)	0.033493	0.089580
LogPGR	-0.061376	0.032567
	t value	Pr(> t )
(Intercept)	0.3739	0.70932
LogPGR	-1.8846	0.06254 .

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.02313 on 95 degrees of freedom  
Multiple R-squared: 0.03604, Adjusted R-squared: 0.02589  
F-statistic: 3.552 on 1 and 95 DF, p-value: 0.06254

## LogLS & LogBBR

Call:

pgls(formula = LogLS ~ LogBBR, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.081508	-0.005739	0.000604	0.005736
Max			
0.067826			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 1.000  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 1  
95.0% CI : (0.998, NA)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error
(Intercept)	0.0036346	0.0894784
LogBBR	-0.0205511	0.0244673

  

	t value	Pr(> t )
(Intercept)	0.0406	0.9677
LogBBR	-0.8399	0.4024

Residual standard error: 0.02055 on 135 degrees of freedom  
Multiple R-squared: 0.005199, Adjusted R-squared: -0.00217  
F-statistic: 0.7055 on 1 and 135 DF, p-value: 0.4024

### LogLS & BBR

Call:  
pgls(formula = LogLS ~ BBR, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.080908	-0.005797	0.000314	0.005957
Max			
0.068466			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 1.000  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 1  
95.0% CI : (0.998, NA)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error
(Intercept)	0.047953	0.079329
BBR	-0.418883	0.600158

  

	t value	Pr(> t )
(Intercept)	0.6045	0.5465
BBR	-0.6980	0.4864

Residual standard error: 0.02056 on 135 degrees of freedom  
Multiple R-squared: 0.003595, Adjusted R-squared: -0.003785  
F-statistic: 0.4871 on 1 and 135 DF, p-value: 0.4864

### LogLS & EQ

Call:



```
pgls(formula = LogLS ~ EQ, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q	Max
-0.078828	-0.006136	0.000365	0.006233	0.068201

Branch length transformations:

```
kappa [Fix] : 1.000
lambda [ ML] : 1.000
  lower bound : 0.000, p = < 2.22e-16
  upper bound : 1.000, p = 1
  95.0% CI   : (0.998, NA)
delta [Fix] : 1.000
```

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.0493281	0.0788595	0.6255	0.5327
EQ	-0.0062038	0.0060670	-1.0225	0.3084

Residual standard error: 0.02052 on 135 degrees of freedom  
Multiple R-squared: 0.007686, Adjusted R-squared: 0.0003352  
F-statistic: 1.046 on 1 and 135 DF, p-value: 0.3084

### **LogAW & LogBrain (n=137)**

Call:

```
pgls(formula = LogAW ~ LogBrain, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q	Max
-0.096146	-0.018069	-0.003223	0.022943	0.083372

Branch length transformations:

```
kappa [Fix] : 1.000
lambda [ ML] : 0.845
  lower bound : 0.000, p = 4.1256e-13
  upper bound : 1.000, p = 2.6201e-14
  95.0% CI   : (0.693, 0.930)
delta [Fix] : 1.000
```

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	1.531256	0.136965	11.180	< 2.2e-16 ***
LogBrain	1.189017	0.058319	20.388	< 2.2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.03285 on 135 degrees of freedom

Multiple R-squared: 0.7548, Adjusted R-squared: 0.753

F-statistic: 415.7 on 1 and 135 DF, p-value: < 2.2e-16

### LogBrain & LogAW (n=137)

Call:

pgls(formula = LogBrain ~ LogAW, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.076116	-0.012451	0.002178	0.022179
Max			
0.102850			

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.914

lower bound : 0.000, p = < 2.22e-16

upper bound : 1.000, p = 5.3489e-11

95.0% CI : (0.811, 0.966)

delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error
(Intercept)	-0.591126	0.142001
LogAW	0.607373	0.033179

  

	t value	Pr(> t )
(Intercept)	-4.1628	5.568e-05 ***
LogAW	18.3057	< 2.2e-16 ***

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.0277 on 135 degrees of freedom

Multiple R-squared: 0.7128, Adjusted R-squared: 0.7107

F-statistic: 335.1 on 1 and 135 DF, p-value: < 2.2e-16

### LogAW & LogML (n=124)

Call:

```
pgls(formula = LogAW ~ LogML, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.226896	-0.056882	0.003256	0.048479
Max			
0.215939			

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.955

lower bound : 0.000, p = < 2.22e-16

upper bound : 1.000, p = 2.1874e-06

95.0% CI : (0.892, 0.984)

delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	2.25039	0.50131	4.4890
LogML	0.70252	0.24520	2.8651
Pr(> t )			
(Intercept)	1.634e-05	***	
LogML	0.00491	**	

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.08431 on 122 degrees of freedom

Multiple R-squared: 0.06305, Adjusted R-squared: 0.05537

F-statistic: 8.209 on 1 and 122 DF, p-value: 0.00491

### LogAW & LogG (n=120)

Call:

```
pgls(formula = LogAW ~ LogG, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.25936	-0.04554	0.01236	0.06288
Max			

0.33515

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.953  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 4.5661e-06  
95.0% CI : (0.891, 0.984)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	-0.96464	1.15838	-0.8327
LogG	1.80601	0.50898	3.5482

Pr(>|t|)  
(Intercept) 0.4066684  
LogG 0.0005576 \*\*\*

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.08522 on 118 degrees of freedom  
Multiple R-squared: 0.09641, Adjusted R-squared: 0.08875  
F-statistic: 12.59 on 1 and 118 DF, p-value: 0.0005576

### **LogAW & LogPGR (n=97)**

Call:

pgls(formula = LogAW ~ LogPGR, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.097210	-0.028830	-0.003171	0.022395
Max			
0.154280			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.660  
lower bound : 0.000, p = 0.00018792  
upper bound : 1.000, p = 2.3523e-12  
95.0% CI : (0.294, 0.860)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	3.405221	0.144050	23.639
LogPGR	1.271542	0.098736	12.878

Pr(>|t|)

(Intercept) < 2.2e-16 \*\*\*  
LogPGR < 2.2e-16 \*\*\*

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.04285 on 95 degrees of freedom  
Multiple R-squared: 0.6358, Adjusted R-squared: 0.632  
F-statistic: 165.8 on 1 and 95 DF, p-value: < 2.2e-16

### **LogAW & LogBBR (n=137)**

Call:

pgls(formula = LogAW ~ LogBBR, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.17202	-0.02936	0.00409	0.03524
Max			
0.24815			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.988  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 0.00079534  
95.0% CI : (0.972, 0.996)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error
(Intercept)	0.975840	0.288575
LogBBR	-1.137380	0.093285

t value Pr(>|t|)

(Intercept) 3.3816 0.000943 \*\*\*  
LogBBR -12.1926 < 2.2e-16 \*\*\*

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.06246 on 135 degrees of freedom  
Multiple R-squared: 0.5241, Adjusted R-squared: 0.5206  
F-statistic: 148.7 on 1 and 135 DF, p-value: < 2.2e-16

### LogAW & EQ (n=137)

Call:

pgls(formula = LogAW ~ EQ, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.277889	-0.060639	-0.006442	0.040266
Max			
0.207793			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.991  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 0.0049564  
95.0% CI : (0.977, 0.998)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error
(Intercept)	3.128052	0.344453
EQ	-0.097092	0.030954
	t value	Pr(> t )
(Intercept)	9.0812	1.11e-15 ***
EQ	-3.1366	0.002098 **

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.08973 on 135 degrees of freedom  
Multiple R-squared: 0.06793, Adjusted R-squared: 0.06102  
F-statistic: 9.838 on 1 and 135 DF, p-value: 0.002098

### LogG & LogBrain (n=109)

Call:

```
pgls(formula = LogG ~ LogBrain, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.053831	-0.007622	-0.000323	0.008138
Max			
0.040662			

Branch length transformations:

```
kappa [Fix] : 1.000
lambda [ ML] : 0.966
  lower bound : 0.000, p = < 2.22e-16
  upper bound : 1.000, p = 2.0126e-07
 95.0% CI   : (0.926, 0.987)
delta [Fix] : 1.000
```

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	2.037712	0.062858	32.4179
LogBrain	0.121734	0.023494	5.1816
Pr(> t )			
(Intercept)	< 2.2e-16	***	
LogBrain	1.044e-06	***	

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.01471 on 107 degrees of freedom

Multiple R-squared: 0.2006, Adjusted R-squared: 0.1931

F-statistic: 26.85 on 1 and 107 DF, p-value: 1.044e-06

### **LogG & LogML (n=110)**

Call:

```
pgls(formula = LogG ~ LogML, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.037432	-0.012057	-0.001836	0.011125
Max			
0.039577			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.981  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 7.0272e-05  
95.0% CI : (0.953, 0.995)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	2.061077	0.100015	20.608
LogML	0.092797	0.046961	1.976

Pr(>|t|)

(Intercept)	<2e-16 ***
LogML	0.0507 .

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.01722 on 108 degrees of freedom  
Multiple R-squared: 0.03489, Adjusted R-squared: 0.02596  
F-statistic: 3.905 on 1 and 108 DF, p-value: 0.0507

**LogG & LogPGR (n=97)**

Call:

pgls(formula = LogG ~ LogPGR, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.039478	-0.006974	0.000346	0.007418
Max			
0.049534			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.982  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 0.0002189  
95.0% CI : (0.952, 0.995)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	2.196472	0.064111	34.2606



LogPGR 0.042242 0.027615 1.5297

Pr(>|t|)

(Intercept) <2e-16 \*\*\*

LogPGR 0.1294

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

'.' 0.1 ' ' 1

Residual standard error: 0.01661 on 95 degrees of freedom

Multiple R-squared: 0.02404, Adjusted R-squared: 0.01376

F-statistic: 2.34 on 1 and 95 DF, p-value: 0.1294

### LogG & LogBBR (n=109)

Call:

pgls(formula = LogG ~ LogBBR, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.043156	-0.010030	-0.000425	0.010007
Max			
0.058907			

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.986

lower bound : 0.000, p = < 2.22e-16

upper bound : 1.000, p = 0.001957

95.0% CI : (0.962, 0.997)

delta [Fix] : 1.000

Coefficients:

Estimate Std. Error

(Intercept) 2.2048339 0.0859436

LogBBR 0.0093397 0.0294593

t value Pr(>|t|)

(Intercept) 25.654 <2e-16 \*\*\*

LogBBR 0.317 0.7518

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05

'.' 0.1 ' ' 1

Residual standard error: 0.01803 on 107 degrees of freedom

Multiple R-squared: 0.0009385, Adjusted R-squared: -0.008399  
F-statistic: 0.1005 on 1 and 107 DF, p-value: 0.7518

### LogBrain & LogML (n=112)

Call:

pgls(formula = LogBrain ~ LogML, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.161036	-0.034281	-0.002672	0.023721
Max			
0.198902			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.974  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 1.8891e-05  
95.0% CI : (0.937, 0.991)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	0.51277	0.33338	1.5381
LogML	0.64228	0.15943	4.0287

Pr(>|t|)

(Intercept)	0.1268978
LogML	0.0001035 ***

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.05659 on 110 degrees of freedom  
Multiple R-squared: 0.1286, Adjusted R-squared: 0.1207  
F-statistic: 16.23 on 1 and 110 DF, p-value: 0.0001035

### LogBrain & LogPGR (n=90)

Call:

pgls(formula = LogBrain ~ LogPGR, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.055050	-0.022065	0.002469	0.018858

Max  
0.121758

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.841  
lower bound : 0.000, p = 1.7012e-05  
upper bound : 1.000, p = 2.0862e-11  
95.0% CI : (0.608, 0.940)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	1.517949	0.122358	12.406
LogPGR	0.881683	0.072689	12.130

Pr(>|t|)  
(Intercept) < 2.2e-16 \*\*\*  
LogPGR < 2.2e-16 \*\*\*

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.03332 on 88 degrees of freedom  
Multiple R-squared: 0.6257, Adjusted R-squared: 0.6215  
F-statistic: 147.1 on 1 and 88 DF, p-value: < 2.2e-16

### **LogBBR & LogBrain (n=137)**

Call:

pgls(formula = LogBBR ~ LogBrain, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q	Max
-0.092284	-0.023197	0.001969	0.019724	0.096146

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.845  
lower bound : 0.000, p = 4.1256e-13  
upper bound : 1.000, p = 2.6201e-14  
95.0% CI : (0.693, 0.930)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-1.531256	0.136965	-11.1799	<2e-16 ***
LogBrain	-0.189017	0.058319	-3.2411	0.0015 **

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.03285 on 135 degrees of freedom

Multiple R-squared: 0.07219, Adjusted R-squared: 0.06532

F-statistic: 10.5 on 1 and 135 DF, p-value: 0.0015

### **EQ & LogBrain (n=137)**

Call:

pgls(formula = EQ ~ LogBrain, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.32904	-0.04317	0.00137	0.04874
Max			
0.45589			

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.662

lower bound : 0.000, p = 3.4471e-05

upper bound : 1.000, p = 2.1461e-13

95.0% CI : (0.336, 0.849)

delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.20624	0.39360	0.524	0.6012
LogBrain	1.08618	0.18851	5.762	5.376e-08 ***

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.09865 on 135 degrees of freedom

Multiple R-squared: 0.1974, Adjusted R-squared: 0.1914

F-statistic: 33.2 on 1 and 135 DF, p-value: 5.376e-08

### LogML & LogPGR (n=92)

Call:

```
pgls(formula = LogML ~ LogPGR, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.055054	-0.010510	0.001511	0.012689
Max			
0.040706			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.715  
lower bound : 0.000, p = 0.00016903  
upper bound : 1.000, p = 1.9276e-08  
95.0% CI : (0.271, 0.941)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	1.510051	0.066984	22.5434
LogPGR	0.260417	0.042560	6.1188
Pr(> t )			
(Intercept)	< 2.2e-16	***	
LogPGR	2.405e-08	***	

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.01805 on 90 degrees of freedom

Multiple R-squared: 0.2938, Adjusted R-squared: 0.2859

F-statistic: 37.44 on 1 and 90 DF, p-value: 2.405e-08

### LogML & LogBBR (n=112)

Call:

```
pgls(formula = LogML ~ LogBBR, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.081016	-0.021992	-0.003466	0.011257
Max			

0.073921

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.949  
lower bound : 0.000, p = < 2.22e-16  
upper bound : 1.000, p = 2.1771e-13  
95.0% CI : (0.873, 0.981)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	1.541035	0.168596	9.1404
LogBBR	0.044323	0.062033	0.7145

Pr(>|t|)

(Intercept)	3.553e-15 ***
LogBBR	0.4764

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.03001 on 110 degrees of freedom  
Multiple R-squared: 0.00462, Adjusted R-squared: -0.004429  
F-statistic: 0.5105 on 1 and 110 DF, p-value: 0.4764

### LogML & EQ (n=112)

Call:

pgls(formula = LogML ~ EQ, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.073923	-0.015123	-0.000019	0.010907
Max			
0.050589			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.902  
lower bound : 0.000, p = 2.7528e-11  
upper bound : 1.000, p = 2.2204e-16  
95.0% CI : (0.756, 0.964)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	1.359893	0.101489	13.3994
EQ	0.059295	0.013476	4.3999

Pr(>|t|)

(Intercept)	< 2.2e-16 ***
EQ	2.516e-05 ***

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.02428 on 110 degrees of freedom

Multiple R-squared: 0.1497, Adjusted R-squared: 0.1419

F-statistic: 19.36 on 1 and 110 DF, p-value: 2.516e-05

### LogPGR & LogBBR (n=90)

Call:

pgls(formula = LogPGR ~ LogBBR, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.13410	-0.02582	0.01286	0.04491
Max			
0.20789			

Branch length transformations:

kappa [Fix] : 1.000

lambda [ ML] : 0.985

lower bound : 0.000, p = < 2.22e-16

upper bound : 1.000, p = 0.013683

95.0% CI : (0.949, 0.998)

delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	-0.69394	0.30076	-2.3073
LogBBR	-0.21420	0.10574	-2.0257

Pr(>|t|)

(Intercept)	0.02339 *
LogBBR	0.04582 *

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.06207 on 88 degrees of freedom  
Multiple R-squared: 0.04455, Adjusted R-squared: 0.0337  
F-statistic: 4.103 on 1 and 88 DF, p-value: 0.04582

### EQ & LogPGR (n=90)

Call:

pgls(formula = EQ ~ LogPGR, data = primate, lambda = "ML")

Residuals:

Min	1Q	Median	3Q
-0.28910	-0.04575	-0.01987	0.03422
Max			
0.18054			

Branch length transformations:

kappa [Fix] : 1.000  
lambda [ ML] : 0.038  
lower bound : 0.000, p = 0.62625  
upper bound : 1.000, p = 9.1526e-12  
95.0% CI : (NA, 0.483)  
delta [Fix] : 1.000

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	1.85731	0.10782	17.2261
LogPGR	0.89814	0.16250	5.5271

Pr(>|t|)  
(Intercept) < 2.2e-16 \*\*\*  
LogPGR 3.279e-07 \*\*\*

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.08616 on 88 degrees of freedom  
Multiple R-squared: 0.2577, Adjusted R-squared: 0.2493  
F-statistic: 30.55 on 1 and 88 DF, p-value: 3.279e-07

### LogBBR & EQ (n=137)

Call:



```
pgls(formula = LogBBR ~ EQ, data = primate, lambda = "ML")
```

Residuals:

Min	1Q	Median	3Q
-0.090680	-0.022400	0.000023	0.020371
Max			
0.093870			

Branch length transformations:

```
kappa [Fix] : 1.000
lambda [ ML] : 0.991
  lower bound : 0.000, p = < 2.22e-16
  upper bound : 1.000, p = 0.003732
  95.0% CI   : (0.972, 0.998)
delta [Fix] : 1.000
```

Coefficients:

	Estimate	Std. Error
(Intercept)	-2.060926	0.132463
EQ	0.195592	0.011934

t value Pr(>|t|)

(Intercept)	-15.559	< 2.2e-16	***
EQ	16.390	< 2.2e-16	***

---

Signif. codes:

0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05  
'.' 0.1 ' ' 1

Residual standard error: 0.03451 on 135 degrees of freedom

Multiple R-squared: 0.6655, Adjusted R-squared: 0.6631

F-statistic: 268.6 on 1 and 135 DF, p-value: < 2.2e-16