**Which Variable Should Be Dependent in Phylogenetic Generalized Least Squares Regression Analysis**

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Table S1. Differences in the performance of models selected by six criteria in 12000 simulations.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria | Models | Correct | Incorrect | *χ*2 | *p*a |
| LLK |  | 8460 | 3540 | 1.746 | 0.186 |
|  |  | 8554 | 3446 |  |  |
| AIC |  | 8554 | 3446 | 1.746 | 0.186 |
|  |  | 8460 | 3540 |  |  |
| *R*2 |  | 8564 | 3436 | 2.578 | 0.108 |
|  |  | 8450 | 3550 |  |  |
| *p* |  | 8450 | 3550 | 2.578 | 0.108 |
|  |  | 8564 | 3436 |  |  |
|  |  | 9211 | 2789 | 399.7 | < 2.2 × 10−16 |
|  |  | 7803 | 4197 |  |  |
|  |  | 9211 | 2789 | 399.7 | < 2.2 × 10−16 |
|  |  | 7803 | 4197 |  |  |

aThe minimal significance value that the R environment (version 4.1.0) gives is 2.2 × 10−16. LLK, log-likelihood; AIC, Akaike information criterion.