

**Table 5: AIC comparison of three models of temperature dependence of PLD for 72 species.**

| Model   | AIC    | Log-likelihood | $\Delta_i$ | $\omega_i$ |
|---|--------|----------------|------------|------------|
| Linearized power law (Eq. 1):<br>random intercepts and slopes   | 180.63 | -84.32         | 16.77      | 0.000      |
| Linearized power law with quadratic in<br>temperature (Eq. 2): random intercepts,<br>'slopes', and quadratic term | 163.86 | -71.93         | 0          | 1.000      |
| Universal temperature dependence (Eq.<br><b>3</b> ): random intercepts and "slopes"                               | 182.13 | -85.06         | 18.27      | 0.000      |

$\Delta_i$  = difference in AIC of the current model from that of the lowest AIC value of among all tested models,  $\omega_i$  = Akaike weight, a normalized relative likelihood for each model.

Akaike weights ( $\omega_i$ ) can be interpreted as the probability under repeated sampling that a model is the best model among the set of models under consideration (9). Equation numbers refer to *Methods*.