Table 9: Modified log-likelihood ratio tests for UTD model.

Eq.	Model: Universal temperature dependence (UTD)	Model description	Log-likelihood	*P*
16	$\ln(PLD_{ij}) = \beta_0 + \beta_1 * (1 / (k^*(T_{ij}+273))) + \varepsilon_{ij}$	No random effects	-263.04	—
17	$\ln(PLD_{ij}) = \beta_{0i} + \beta_1 * (1 / (k^*(T_{ij}+273))) + u_{0i} + \varepsilon_{ij}$	Random intercepts only	-85.15	<0.001
18	$\ln(PLD_{ij}) = \beta_{0i} + \beta_1 * (1 / (k^*(T_{ij}+273))) + u_{0i} + u_{1i} / (k^*((T_{ij}) + 273)) + \varepsilon_{ij}$	Random intercepts and 'slopes'	-80.04	0.004

Testing for needed random effects in the UTD model (Eq. **3**) for full data set (72 species, S.I. Tables 3 and 4). We follow the methodology outlined in Verbeke and Molenberghs (2000, pp. 70-71)[2], for carrying out these tests. See also p. 26 of *Supporting Text* 2.

[2] Verbeke G, Molenberghs G (2000) *Linear mixed models for longitudinal data* (Springer-Verlag, New York).