Figure S1. Analysis of spatial relationship between Chinese pine and five other tree species based on the randomization test of the independence-of-components null hypothesis. In the subscript of the estimated cross-type L, 1 represents *F. chinensis*, 2 represents *S. reticulata* var. *amurensis*, 3 represents *Q. mongolica*, 4 represents *A. sibirica*, 5 represents *P. tabuliformis*, and 6 represents *U. pumila*. The grey area are formed by simulation envelops; the red curve represents the difference between the estimated cross-type L of two

types minus the corresponding distance scale *r*. (**a**) *P. tabuliformis* and *F. chinensis*; (**b**) *P. tabuliformis* and *S. reticulata* var. *amurensis*; (**c**) *P. tabuliformis* and *Q. mongolica*; (**d**) *P. tabuliformis* and *A. sibirica*; (**e**) *P. tabuliformis* and itself; (**f**) *P. tabuliformis* and *U. pumila*.