



# Isolation and characterization of microsatellite loci from an endangered tree species, *Toona ciliata* var. *pubescens*

J. Liu<sup>1</sup>, Z.-X. Sun<sup>2</sup>, Y.-T. Chen<sup>1</sup> and J.-M. Jiang<sup>1</sup>

<sup>1</sup>Research Institute of Subtropical Forestry, Chinese Academy of Forestry, Hangzhou, Zhejiang, China

<sup>2</sup>State Key Laboratory of Rice Biology, China National Rice Research Institute, Hangzhou, Zhejiang, China

Corresponding author: J. Liu  
E-mail: ywliu2005@163.com

Genet. Mol. Res. 11 (4): 4411-4417 (2012)

Received March 9, 2012

Accepted June 22, 2012

Published September 19, 2012

DOI <http://dx.doi.org/10.4238/2012.September.19.4>

**ABSTRACT.** *Toona ciliata* var. *pubescens* is considered an endangered tree species native to China. In order to help develop a conservation program for this species, we evaluated its genetic diversity and population genetics. We isolated microsatellite DNA loci using streptavidin beads. A genomic library, enriched with microsatellites, was constructed and screened by sequencing. We detected 8 polymorphic microsatellite loci from the tree tissue samples. The population of *T. ciliata* var. *pubescens* used in this study is located within the Guanshan National Nature Reserve, Jiangxi Province, China. Sixty-five individuals were collected for the study. The Guanshan population was split into two subpopulations due to terrain. The number of alleles per locus ranged from 2 to 6, with expected heterozygosity from 0.2386 to 0.6772. Four of the 8 loci, except loci Tc02, Tc04, Tc05, and Tc07 showed no significant departure from Hardy-Weinberg equilibrium. The mean observed heterozygosity was 0.59. The average coefficient of genetic differentiation between the two subpopulations was quite low ( $F_{ST} =$

0.0235). The level of gene flow ( $N_m$ ) was 10.39, reflecting a high degree of gene flow between the two subpopulations.

**Key words:** Microsatellite loci; Endangered tree; Isolation