



Genetic diversity analysis of tree peony germplasm using iPBS markers

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Genet. Mol. Res. 14 (3): 7556-7566 (2015)

Received November 24, 2014

Accepted April 7, 2015

Published July 3, 2015

DOI <http://dx.doi.org/10.4238/2015.July.3.31>

ABSTRACT. We examined the genetic diversity of 10 wild species (populations) and 55 varieties of tree peony using inter-primer binding site (iPBS) markers. From a total of 36 iPBS primers, 16 were selected based on polymorphic amplification. The number of bands amplified by each primer ranged from 9 to 19, with an average of 12.88 bands per primer. The length of bands ranged from 100 to 2000 bp, concentrated at 200 to 1800 bp. Sixteen primers amplified 206 bands in total, of which 173 bands were polymorphic with a polymorphism ratio of 83.98%. Each primer amplified 10.81 polymorphic bands on average. The data were then used to construct a phylogenetic tree using unweighted pair group method with arithmetic mean methods. Clustering analysis showed that the genetic relationships among the varieties were not only related to the genetic background or geographic origin, but also to the flowering phase, flower color, and flower type. Our data also indicated that iPBS markers were useful tools for classifying tree peony germplasms and for tree peony breeding, and the specific bands were helpful for molecular identification of tree peony varieties.

Key words: Genetic diversity; Germplasm resources; iPBS molecular markers; *Paeonia suffruticosa* Andrews