

F6

Construction of a Deep Coverage BAC Library of Chili Pepper and Identification of BAC Clones for Putative Fruit Color Genes

Yoo EunYoung*, Lee Coong-Jae , Kim Shinje,
Kim Yong-hwan, and Kim Byung-Dong

School of Plant Science, College of Agriculture
and Life Sciences, and Center for Plant
Molecular Genetics and Breeding Research, Seoul
National University

A bacterial artificial chromosome (BAC) library consisting of 235,000 clones with an average insert size of 130 kb was constructed from *Capsicum annuum*, 'CM334'. Based on a pepper haploid genome size of 2,702 Mbp/C, the BAC library is estimated to contain approximately 12 genome equivalents and represents at least 99% of the pepper genome. To estimate the possibility of isolating a specific clone, the library was screened with single or low-copy gene-specific probes and RFLP probes. RFLP markers linked to disease resistance and fruit quality genes were identified BAC clones and integrated with genetic linkage map. BAC clones for PSY and CCS were identified and made contig at the SNU linkage groups 4 and 7. These BAC clones could be useful to further study fo major genes on carotenoid biosythesis pathway controls that pepper fruit color.

Keywords: chili pepper, BAC library, PSY, CCS