

## Optimized Method for Construction of Bacterial Artificial Chromosome Library in Cotton

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**Abstract:** Some key processes influencing construction of cotton bacterial artificial chromosome (BAC) library, such as preparation of plug, DNA partial digestion, selection of digested fragment, molecular ratio between insert DNA and vector, concentration of ligates etc, were explored. A BAC library of the Chinese

elite cotton variety, CCRI 12, has been constructed with more than 38000 clones based upon the optimized method. In the library, the average size of insert DNA was about 120 kb. The percentage of blue clones and empty clones were less than 0.5% and 1%, respectively. A molecular ratio of 1 : 15 for DNA insert fragment and vector was found to be more effective, which could produce about 2000 clones in one transformation with  $4 \text{ cfu} \cdot \mu\text{l}^{-1}$ . The method will lay a foundation for more-genome-equivalent BAC library construction of CCRI 12 and cotton genome research.

**Key words:** cotton; bacterial artificial chromosome(BAC); genome; library