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A tandemly repeated DNA sequence was identified and characterized by the combined RAPD and FISH techniques from the total genomic DNA of *Allium cepa*. Clone containing this repeating sequence (named pAc074) was selected and sequenced. This repeating sequence of 314-bp inserted into pAc074 contained 52.55% adenine and thymine residues, and showed the primer sequence used in both terminals of sequence. The alignment of nucleotide sequences of the clone pAc074 and the satellite DNA sequences, ACSAT1, ACSAT2, and ACSAT3, of *A. cepa* revealed that the clone pAc074 is partially homologous to the satellite sequences with, on average, 87% similarity. Sequential C-banding analysis and fluorescence *in situ* hybridization using this tandemly repeated sequence as a probe indicated that the detected sites were coincident with the regions of major C-banded constitutive heterochromatin in the terminal region of the both arms of all 16 chromosomes except for short arm of chromosome 6. It was also detected in the intercalary region on the long arm of chromosome 7. Insert sequence of the clone pAc074 represents a part of highly repeated sequences distributed in terminal region of the chromosomes.

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Keywords: tandemly repeated DNA sequence, RAPD, C-banding, FISH