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Molecular Cytogenetics of rDNA Genes in the *Youngia sonchifolia*

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Objectives

In this study, we observed the chromosome numbers and determined the 5s and 45s rDNA gene loci of *Youngia sonchifolia* and its regenerants.

Materials and Methods

1. Materials: *Y. sonchifolia* and its regenerants
2. Methods: Chromosome preparation and Feulgen staining were applied for karyotype analysis. The 45s rDNA and 5s rDNA were labelled with digoxigenin-11-dUTP and biotin-16-dUTP by PCR method for fluorescent *in situ* hybridization (FISH).

Results and Discussion

In karyotype analysis, chromosome numbers of *Y. sonchifolia*

and its regenerants were $2n=10$ and all the chromosomes pairs were submetacentrics. NORs were observed in chromosome 3. Physical mapping of the two multigene families coding for 5s rRNA and 45s rRNA in *Y. sonchifolia* and regenerants was carried out using fluorescence *in situ* hybridization (FISH). The 5s rDNA signals were located only on long arm of chromosome 3 and 45s rDNA loci were found at NORs region so the two ribosomal gene families were generally located on same chromosome.

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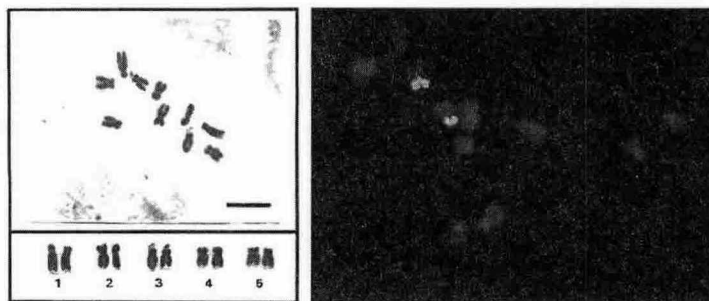


Figure 1. Somatic metaphase chromosome complement ($2n=10$) and karyotype of *Y. sonchifolia* and two-color FISH pattern. Bar, 5 μ m.