

## 세포유전학적 방법을 이용한 제주지역 약용식물자원의 염색체 연구

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### Studies on the Chromosomes of Medicinal Plants from Jeju Island using Cytogenetic Methods

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### Objectives

To establish the chromosome data of medicinal plants from Jeju Island, we investigated somatic chromosome numbers, karyotype analyses and molecular cytogenetic results of 144 taxa belonging to 124 genera of 49 families.

### Materials and Methods

#### ○ Materials

The root tips of seedling or whole plants studied were collected from Jeju island. Voucher specimens of all materials were deposited in the herbaria (KB and WT).

#### ○ Methods

Root tips were treated with cold water at 4°C for 24 hour, fixed in 1:3 (acetic acid : ethanol) and then used for chromosome counting, karyotypic analysis and FISH (fluorescence *in situ* hybridization).

### Results

In this study, the somatic chromosome numbers of 144 taxa of medicinal plants from Jeju island were investigated and karyotype analysis and FISH data using two rDNAs (5S and 45S rDNA) were conducted from some useful plants. We especially focused on chromosome data of endemic and endangered [*Psilotum nudum* (2n=ca. 100), *Sarcandra glabra* (2n=2x=32), *Saururus chinensis* (2n=2x=22), *Zanthoxylum coreanum* (2n=70), *Paliurus ramosissimus* (2n=2x=24) and *Cirsium rhinoceros* (2n=3x=30)] species. The chromosomes numbers of 60 taxa are recorded firstly, and karyotype analyses are newly conducted for 41 taxa. These chromosome information are important and valuable to systematics, breeding, horticulture and biotechnology of medicinal plants.

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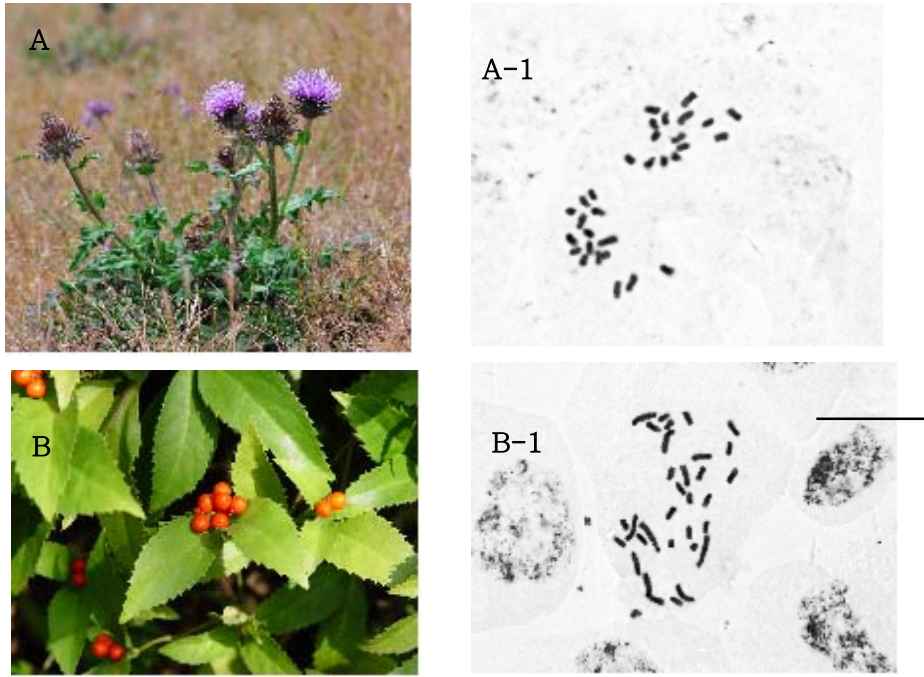


Fig. 1. Habit and somatic metaphase chromosomes of *Cirsium rhinoceros*,  $2n=30$  (A and A-1) and *Sarcandra glabra*,  $2n=32$  (B and B-1). Scale bar,  $5\mu\text{m}$ .

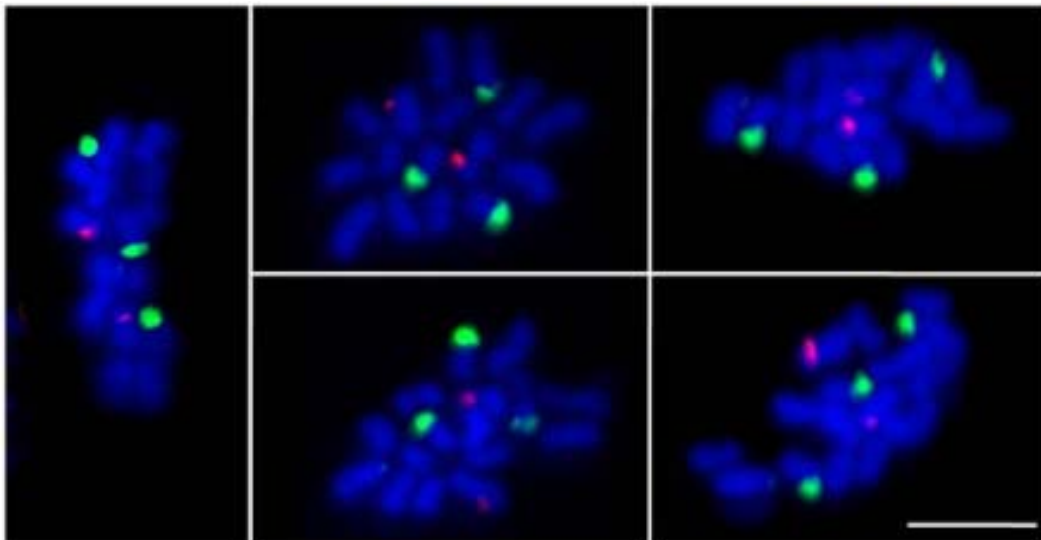


Fig. 2. FISH patterns of *Codonopsis lanceolata* ( $2n=16$ ) using two 5S (red) and 45S rDNAs (green). Scale bar,  $5\mu\text{m}$ .