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## Plant regeneration through bulblet formation and somatic embryogenesis of *Lilium lancifolium* Thunb.

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### Objectives

To establish a system for high frequency plant regeneration system via bulblet formation and somatic embryogenesis of *Lilium lancifolium* Thunb, bulb scale explants immature zygotic embryos were cultured on medium containing 2,4-dichlorophenoxyacetic acid.

### Materials and Methods

#### 1. Plant material

Explants – Bulbs and immature zygotic embryos from *Lilium lancifolium* Thunb.

Medium - MS (Murashige and Skoog 1962), 2,4-dichlorophenoxyacetic acid

Counting of chromosomes – acetic alcohol (acetic acid:alcohol = 1:3), 1N HCl, aceto-carmin

#### 2. Methods:

After seeding, excised bulb scale explants and immature zygotic embryos were placed on MS medium supplemented with various concentration (0, 0.1, 0.2, 0.3, 0.5, 1, 3 mg/L) of 2,4-dichlorophenoxyacetic acid

### Results and Discussion

Bullets and somatic embryos were formed on MS medium supplemented with various growth regulators after 8 weeks of culture. Bulblets was formed at 94.2 %, when bulb explants were cultured on MS medium supplemented with 0.2 mg/L 2,4-D. Somatic embryo was formed at 66.7% when zygotic embryos were cultured on MS medium supplemented with 0.1 mg/L 2,4-D. Upon transfer to MS basal medium, bulblets and somatic embryos were elongated and rooted after an additional 4 weeks of culture. Regenerated plantlets were subjected to acclimatization.

The chromosome analysis of root tip cells indicated that regenerated plants from bullets and zygotic embryos is  $3n=36$  and  $2n=24$ , respectively.