

## The genetic variability of proliferative cell lines of *Larix sibirica*

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The quality of 23 proliferative embryogenic cultures (EC) and the genetic changes associated with somaclonal variations in the cell lines (CLs) and cloned plants of *Larix sibirica* were studied. The age of CLs was from 6 month to 9 years. CLs were obtained from explants (zygotic embryos) of Siberian larch trees as a result of open and controlled pollination. The frequency of EC formation was 4.5–23 % on the nutrient medium AI, supplemented by plant growth regulators: (2,4-D:6-BAP, 2:0,5). All CLs actively formed embryonal-suspensor mass (ESM), in which globular embryos propagated through cleavage, budding formation and proliferation of embryonic tubes of the suspension. Cytogenetic studies of proliferating CLs of Siberian larch showed that the cells of young cell lines (age 1–2 years) contained mainly cells with a normal number of chromosomes for this species ( $2n = 24$ ). Analysis of long-cultivated (7–9 years) CLs showed that majority of them were genetically unstable and only one (CL6) was characterized by stability ( $2n = 24$ ). The genetic stability of this line was confirmed of the microsatellite analysis of nine microsatellite loci. Molecular genetic studies of proliferating CLs, conducted using RAPD analysis allowed us to obtain a diversified line-specific PCR spectra that can be used as markers of ECs. Somatic embryos matured on a nutrient medium AI with ABA (32 mg/l). The number of mature somatic embryos in different cell lines varied from 9 (CL16.19) up to 1220 (CL 4) per 1 g of fresh ESM. Somatic embryos germinated (83 % CL4) on the medium AI without hormones and rooted (5–15 %). Stable maturation and germination of embryos was observed in CL6. For 7 years cloned trees grow to the station “Pogorelsky Bor” IF SB RAS successfully. Microsatellite analysis clones showed their full compliance with this cell line.

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