

Formation of Genetic Tumor and Characteristics of Teratoma Shoot from Tobacco Interspecific Reciprocal Hybrids

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Reciprocal interspecific hybrids between *N. glauca*(2n=24) and *N. langsdorffii*(2n=18) were obtained by intercrossing. One hundred percent of F₁ seeds was produced from intercrossing of *N. glauca* × *N. langsdorffii*, whereas the frequency of F₁ hybrid seed formation from *N. langsdorffii* × *N. glauca* was very low. However, all the hybrid seeds were germinated well and then grown to normal plantlets. All the plants of F₁ hybrids have chromosome number of interspecific hybrids(2n=21). From observation of morphological characteristic, the structure of petiole, leaf, flower and the morphology of pollen have characteristics of F₁ hybrid. Spontaneous tumors(genetic tumor) were formed from each F₁ hybrid. Genetic tumor was formed from *N. glauca*, while the genetic tumor arose only after reproductive phase when the maternal type of F₁ hybrid was from *N. langsdorffii*. The genetic tumor actively proliferated on hormone-free medium and produced numerous teratoma shoots. In addition, normal leaf or stem explants of F₁ hybrid produced calli on hormone-free medium after 15 days of culture, the calli produced new numerous teratoma shoots after 30 days. The frequency of teratoma shoot formation from interspecific hybrid was higher in the *N. glauca* × *N. langsdorffii* than in the *N. langsdorffii* × *N. glauca*. Root development from the teratoma shoots was hardly obtained. Teratoma shoots without roots in vitro can form genetic tumor at the vegetative growth phase after tissue culture.