# Obtaining of Transgenic Broccoli Plants with Alpha-2B Leucocyte Interferon Gene

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The leukocyte human interferon alpha-2b is widely used for curing viral infection diseases and some types of cancer. Nowadays, the recombinant interferon is commonly produced in bacterial and mammalian cell expression systems. However, plants can be also used for production of the pharmaceutical recombinant proteins. Plant eukaryotic systems are considered safer because of no-risk of product contamination by animal viruses and prions or bacterial toxins. The aim of our study was to obtain the transgenic broccoli plants able to express human interferon alpha 2-b gene. Broccoli was chosen due to the ability to accumulate sulforaphane glucosinolate known for its antitumor properties. We consider that the combination of sulforaphane and alpha interferon would improve the antitumor effect of the obtained transgenic plants. In our work Agrobacterium-mediated transformation of broccoli plants using vector constructs containing the sequence coding for interferon and phosphinothricinacetyltransferase genes was performed. We used hypocotyl explants of 10-day aseptic broccoli seedlings of Romanesco variety for the genetic transformation as they had demonstrated the highest regeneration ability. Hypocotyl explants were incubated on Murashige and Skoog (MS) medium supplemented with 1 mg / L 6-benzyladenine (BA) and 0.05 mg / L naphthaleneacetic acid (NAA) and containing 5 mg / L phosphinotricin as the selective agent. The active regeneration of broccoli plats was observed on the transformed explants in four weeks after transformation. In this study, were obtained broccoli plants resistant to phosphinothricin and potentially containing human interferon alpha-2b gene.

**Awards Won:**