Agrobacterium-mediated production of *Brassica napus* transgenic plants with a stilbene synthase gene

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Stilbene synthase gene isolated from a grapevine cultivar (*Vitis vinifera L*) under the control of the KCS or Napin promotor was introduced into rapeseed (*Brassica napus*) plants by Agrobacterium-mediated gene transfer. The introduced gene was expressed and piceid (resveratrol-glucoside) rather than Resveratrol was produced in the seeds of the transformants. Resveratrol is a phytoalexin produced in several plants in response to fungal infection or UV irradiation. Moreover, Resveratrol and/or piceid are considered to have some beneficial effects on human health. These compounds are known to reduce coronary heart-disease mortality, and possess activities preventing arteriosclerosis, such as inhibition of platelet aggregation. Hypocotyle segments of rapeseed were inoculated with A. tumefaciens C58 carrying the PZP111 vector and cultured on MS-Medium for two days. After transformation, the segments were cultured on a selection medium. After two or three weeks of culture, adventitious buds differentiated at the cut ends. When the buds had developed into shoots, they were cuted off and transferred to a medium for plant regeneration. One plant was selected from each segment and the presence of the marker gene was checked by PCR. The plants identified to have the gene were transferred to soil, and further confirmation of the integration of the stilbene synthase gene was made by Southern analysis. All further analysis was carried out in seeds. The Resveratrol produced in the transgenic plants seems to be metabolised into piceid by an endogenous glycosyltransferase. The HPLC profile of seeds extract showed a shorter retention time than that of Resveratrol. Among the transformants obtained, the highest piceid content in the seeds was 159µg/g fresh weight. The value of the Resveratrol content was estimated as 93,37µg/g. The correlation between the number of integrated copies and the piceid content, and the concentration of piceid in the seeds among the constructs used will be shown.