#### Poster Abstract - H.05

# GENOMIC INSTABILITY IN *NICOTIANA* TRANSGENIC PLANTS DETECTED BY AFLP ANALYSIS

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A relevant part of the discussion on genetically modified plants (GMP) focuses on the possible consequences due to the insertion and expression of one or more foreign genes in the plant genome. Moreover, controlled transgene integration into a specific and pre-determined site remains to be achieved, in spite of several gene targeting approaches already developed (Kumar and Fladung, 2001).

The transformation of *Nicotiana langsdorffii* plants with a binary *Agrobacterium* vector containing the *gr* gene, coding for the rat glucocorticoid receptor under the constitutive viral promoter CaMV35S (Irdani et al. 1998), produced different primary transformants showing alterations in the morphology and development with respect to the wild type. A detailed analysis of four different transgenic *gr* plants, maintained in *in vitro* culture over a period of 8-10 years, allowed us to detect differences in the copy number of transgenes but sequence homology of the transgene insertion sites. Moreover, in order to investigate the possible perturbations due to the transformation process, AFLP (Vos et al. 1995) and MSAP (Reyna-Lopez et al. 1997) analyses were carried out both in transgenic and untransformed control plants. Between and within groups genetic distances were established to discriminate differences derived from somaclonal variation effects. Finally, analyses of MSAP profiles suggested that qualitative differences in DNA methylation patterns could be attributed to the insertion of *gr* in the genome of *Nicotiana*.

## References

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