Poster Abstract - H.06

DEVELOPMENT OF A NEW ANALYTICAL TOOL FOR TRACEABILITY OF TRANSGENES IN GENETICALLY MODIFIED PLANTS

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GMO, traceability, DNA-based sensors

Analytical techniques to track transgenes in GMO are essential both for the production and trade of modified crops in the view of the adoption of different new regulations by Government Institutions. A great effort has been devoted to the development of new devices for the detection of transgene sequences in the environment and in the food chain. In particular, PCR and, more recently, real time PCR are widely used to amplify target DNA fragments corresponding to marker genes, promoter and terminator sequences or portions of genes of interest and transgene-host integration junctions (Hernandez et al. 2003; 2005; Taverniers et al. 2004). However PCR-based techniques being prone to false positive/negative results are still time consuming, and require the sequencing of the amplified products. Recently, we have demonstrated the ability of different DNA-based sensors to detect PCR-amplified sequences complementary to part of CaMV35S viral promoter and present in transgenic *Nicotiana* plants (Minunni et al. 2001; Giakoumaki et al. 2003).

Here we present a method based on piezoelectric sensor for direct detection of specific sequences in the whole genomic transgenic plant DNA, suggesting that biosensors may represent an interesting and alternative candidate analytical tool for GMO traceability (Minunni et al., in press).

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