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Somatic embryogenesis in tamarillo: cytological, physiological and molecular aspects

REFERENCE
S1/P47

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Cyphomandra betacea is a woody plant of the *Solanaceae* family, usually known as tamarillo. In recent years, different aspects of somatic embryogenesis induction have been studied on this plant making it a suitable model to understand the cytological and molecular mechanisms involved on somatic embryo formation and development, a morphogenic process with important applications both for plant cloning and genetic transformation. Experiments carried out at our lab optimized the conditions for somatic embryo formation and histological and ultrastructural studies identified and characterized the cells involved on somatic embryo differentiation. Further analysis identified a protein (NEP, 26,5 kDa) consistently present in non-embryogenic calli. A cDNA corresponding to this protein was further isolated from a cDNA library prepared from non-embryogenic calli, and sequenced. The sequence encodes a 221 amino acid long protein showing a high degree of homology to the *Arabidopsis thaliana* OBP33-protein sequence of unknown function and with an *Arabidopsis* RNA methyltransferase. This seems to indicate a post-transcriptional mechanism of control for somatic embryogenesis induction. Seeds of *Arabidopsis* knocked-out for this RNA methyltransferase were obtained from NASC and are being evaluated for their ability to undergo somatic embryogenesis. An antibody against NEP was also produced and the expression of the NEP protein will be evaluated in tamarillo and *Arabidopsis* by immunocytochemistry

Detection of genetically modified maize in foodstuffs

REFERENCE
S1/P48

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During the past decade, the development of biotechnology has revolutionised agriculture by the introduction of genetically modified organisms (GMO) with characteristics of interest. In Europe the acceptance of genetically modified (GM) food by consumers is controversial, and concerns about their safety persist among public opinion. The EU legislation demands the labelling of food products containing more than 0.9 % of GM material. The most accepted techniques for GMO detection methods rely on polymerase chain reaction (PCR) or real-time quantitative PCR techniques, which are based on the specific detection of transgenic material and plant sequences. The GMO have been extensively cultivated, reaching 102 millions of hectares in 2006, from which GM maize lines represent 25 % of maize acreage. Some of the most frequent GM maize lines are the ones containing the events *Bt*11, *E*176 and *MON*810, which confers resistance to the European corn borer. For this reason, several PCR assays were developed, namely, the specific detection of maize sequences, screening sequences (35-S promoter), and specific sequences for the referred events. Certified maize flours containing 0, 0.1, 1 and 5 % of GM material were used as reference materials for each event. The food samples under study included whole grains and processed foods such as flours, snacks, cereals and breads, obtained from the local supermarkets. The presence of GM maize was not detected in most of the analysed food samples.