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ABSTRACTS

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Medicago truncatula: A model plant for studying somatic embryogenesis and organogenesis in legumes

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We are investigating the process in which protoplast cells and explant leaves of *Medicago truncatula* (Mt) de-differentiate to establish totipotency and form embryos or roots through proliferation and re-differentiation. The Mt mutant line 2HA has a 500 fold greater capacity to regenerate plants in culture by somatic embryogenesis than wild type Jemalong when auxin (naphthaleneacetic acid) and cytokinin (6-benzylaminopurine) are added to the culturing media (Rose and Nolan, 1995; Nolan et al., 2003). We have used transcriptomic and proteomic analyses which revealed that changes in gene/protein expression correlate with the developmental commitment and growth during somatic embryogenesis and organogenesis (Imin et al., 2004; Imin et al., 2005). We have identified many genes/proteins including several transcription factors that may play critical roles in cellular commitment during embryogenesis.

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Profilin variability in olive (*Olea europaea* L.) pollen cultivars

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Profilins are ubiquitous low molecular weight (12–18 kDa) proteins found in animals, plants, and even viruses. They are structurally well-conserved proteins able to interact with a variety of physiological ligands including cytoskeletal components -actin- and polyphosphoinositides (Goldschmidt-Clermont et al., 1990). Profilins may link the microfilament system with signal transduction pathways. Plant profilins have been shown to be highly crossreactive allergens within a broad range of species and plant tissues. Pollen profilins bind to IgE antibodies of allergic patients, thus triggering the symptoms of type I allergy.

Olive pollen profilin (also named Ole e 2) has been characterized, sequenced and expressed in *E. coli*, showing 86 and 73(identity to birch and grass profilins respectively (Ledesma et al., 1998; Martnez et al., 2002). The protein displays a molecular weight of 15–18 kDa and a high grade of polimorfism in both its nucleotide and amino acid sequences. Three isoforms of the protein have also been described. The present work reports and analyzes the presence of polymorphism in the nucleotide sequences of profilins individually amplified by RT-PCR from the pollen of several olive cultivars. Expression of profilins in the olive pollen cultivars has also been analyzed by Western Blotting and immunofluorescence localization of the protein by confocal microscopy. Localization was mainly performed in pollen tubes grown after in vitro germination of pollen.

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