ABSTRACT

The arabinogalactan proteins (AGPs) are macromolecules found in practically all plant organs, being associated with several aspects of the plant growth and development. These molecules contain carbohydrates and proteins in a 9:1 relation. The carbohydrate moiety is composed mainly of type II arabinogalactans, whereas the protein has particular amino acid domains that allow classifying the AGPs into two groups, classical and non-classical. In addition, the former are characterized by a C-terminal tail that predicts the incorporation of a glycosylphosphatidylinositol group (GPI) that allows the attachment of the AGPs to the plasma membrane. Plant cell cultures of several species release AGPs into the culture medium. The biochemical characteristics of the AGPs released into the medium, and the proposed biochemical and cellular mechanisms by which AGPs participate in plant cell differentiation and growth are reviewed. The plant cells release classical as well as non-classical AGPs into the culture medium. The origin of these AGPs could likely be the plasma membrane or the cell wall. They are involved in the control of cellular growth and differentiation processes, aspects that have fundamental importance in the induction of somatic embryogenesis and organogenesis, key steps in plant micropropagation programs. The biochemical mechanism by which the AGPs participate in cell growth and differentiation implies that the AGPs or their degradation products participate like signal molecules.

http://www.scielo.org.ve/scielo.php?script=sci_abstract&pid=S0378-18442009000300006&lng=es&nrm=iso&tlng=en

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