

CHARACTERIZATION OF KEY GENES OF ACTIVE METABOLITES BIOSYNTHESIS IN MEDICINALS PLANTS

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The plants are able to produce thousands of chemical compounds, many of which have been used by humans for centuries as drugs or phytomedicines. The beneficial effects of medicinal plant preparations typically derive from the combination and variety of secondary metabolites present in plant tissues. *Passiflora incarnata* is a plant used as an anxiolytic and sedative; the positive activity of *Echinacea angustifolia* derives from the presence of several active principles (caffeic acid derivatives, polyalkenes).

The two species were studied with the aim to identify the key genes of biochemical pathways which regulate the production of important compounds; and characterize the genes particularly expressed in relation to a higher production of secondary metabolites.

A cDNA library was prepared from *Passiflora* leaves and some clones are being characterized.

A cDNA coding a phenylalanine ammonia lyase (PAL) in *Passiflora incarnata* was obtained through RT-PCR with degenerate primers, individuated on the conserved domains of *PAL* genes in different plant species. The expression of gene *PAL* was analysed at different growth conditions and during different developmental stages.