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## Full Length Research Paper

# Molecular identification of MIP genes expressed in the roots of an arbuscular mycorrhizal *Trifolium alexandrinum* L. under water stress

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## Abstract

Arbuscular mycorrhizal fungi which develop a mutualistic symbiotic relationship

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with most land plants can improve plant resistance under water stress conditions. Moreover, it is known that the water channel proteins (MIP genes) act as water transporting systems in plants. In order to determine the effect of these fungi on the expression these MIP genes under drought stress, expressed MIP in both mycorrhizal and nonmycorrhizal plants were identified by cloning RT-PCR-MIP fragments obtained using degenerate oligonucleotides corresponding to the conserved NPA boxes. It was shown that the *AluI* RFLP typing revealed a significant diversity of expressed MIP fragments in mycorrhizal plants compared to nonmycorrhizal ones. Analysis of deduced aminoacids allowed the identification of three MIP sequence groups in mycorrhizal roots clustering with MIP families corresponding to AQPZ, PIP and TIP while only one MIP family was induced in nonmycorrhizal roots.

**Key words:** Water stress, arbuscular mycorrhiza, MIP genes.

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