Molecular identification of nodule-specific and nodule-induced monosaccharide transporters (MSTs) in *Medicago truncatula*.

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Legumes are cornerstones of sustainable agriculture, as the symbiotic relation they form with soil bacteria, called rhizobia, results in nitrogen fixation (symbiotic nitrogen fixation – SNF). Plant cell membrane transporters are essential for nutrient exchange between legumes and rhizobia, facilitating the appropriate conditions for nodule metabolism and being potential sites of SNF regulation. *M. truncatula* is an excellent candidate for studies of nodule transporters, due to the already existing gene expression data, the fact that it is a model organism for biological studies, and the symbiotic relations it forms with the rhizobium *Sinorhizobium meliloti*. Phylogenetic taxonomy and identification of nodule-induced and nodule-specific MSTs in *M.truncatula* was conducted *in silico,* using the MtGEA (Noble foundation) and JCVI: Medicago public databases. Gene structure, relative expression levels of MSTs in different organs and nodule developmental stages were obtained in order to identify nodule-specific and nodule-induced MSTs. Furthermore, aminoacid sequence of the putative MSTs and topology-secondary structure of the encoded protein were predicted. Total RNA was extracted from different organs and nodule developmental stages of *M. truncatula,* gene-specific primers were designed and RT- qPCR analysis was performed to verify the expression patterns of putative transporters. This work represents the starting point for the elucidation of the MSTs exact physiological and biochemical role during SNF using the available reverse genetic resources for *M. truncatula*.

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