

**TRANSFORMATION OF BARREL MEDIC (*MEDICAGO TRUNCATULA* L.)
WITH THE *OXA1* cDNA FROM *ASTER SEDIFOLIUS*: TOWARDS THE
GENETIC MANIPULATION OF TRITERPENE SAPONIN BIOSYNTHESIS**

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barrel medic, genetic transformation, triterpenoid saponins

Triterpene glycoside saponins have a range of different properties, including antimicrobial, insecticidal and allelopathic activity. They also have pharmacological applications such as anticholesterolemic, hemolytic, adjuvant and anticancer agents. Objective of this work is to evaluate the possibility to modify the triterpenoid saponin content in *Medicago* spp. by genetic engineering. Flower explants of *Medicago truncatula* (genotype R108) were co-cultivated with EHA105 disarmed *A. tumefaciens* strain. The cloning vector pG0029OXA1 contained the *OXA1* cDNA from *Aster sedifolius* under the control of the cauliflower mosaic 35S promoter, and the neomycin phosphotransferase II (*nptII*) gene. *OXA1* cDNA encodes for a β -amyrin synthase, a key enzyme involved in biosynthesis of triterpene glycosides. After callus induction and *in vitro* embryogenesis, putative transgenic plantlets were regenerated and then micropropagated for further analyses. The presence of *nptII* and *OXA1* genes was demonstrated by PCR analysis. Molecular and biochemical characterizations are currently underway.