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Poster Abstract – F.13

CHEMICAL CHARACTERIZATION OF SAPONINS FROM A MUTANT PLANT OF *M. TRUNCATULA*

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In a collection of T1 transgenic plants of *M. truncatula* obtained by inserction mutagenesis (activation tagging procedure) and screened for the presence of haemolytic saponins, one plant showing no haemolytic activity was evidenced. The T2 progeny (30 plants) was grown to investigate the transmission of the phenotype and to determine the number of insertion fragments by Southern analysis.

Preliminary investigations of saponins and sapogenins of this mutant plant showed a completely different composition compared to the untransformed parental strain used as control. Saponins were than extracted in water-methanol mixture, purified by reverse-phase chromatography and analyzed by different chemical methods to obtain information on their structure.

Structure investigation of saponins was performed by identification of sapogenins and sugars released after acid hydrolysis from pure saponins. Detailed information on the saponin structure was obtained by a combination of analytical methods including HPLC, NMR, MS analyses performed on the pure compounds.

The differences in qualitative and quantitative composition allowed to obtain information on the biosynthetic pathways of the aglycone moyeties, involving the squalene-2,3-epoxide that, after cyclization to give the corresponding pentacyclic triterpene nucleus, gives the different sapogenins by successive oxidation steps.