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CONSTRUCTION OF COLLECTIONS OF MUTANTS IN *MEDICAGO TRUNCATULA*. II. FORWARD GENETICS STRATEGY: ACTIVATION TAGGING

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The construction of collections of mutants by insertional mutagenesis in *Medicago truncatula* has been realized in the frame of the MIUR National Project 'FIRB – Post Genomica di leguminose foraggere' in order to i) build up a key-tool, based in Italy, for genetic studies in the model species *M. truncatula*, ii) generate potential mutations by insertion of retrotransposons or of T-DNA vectors containing multimerized transcriptional enhancers and iii) to identify the plant genes responsible for the mutations by means of transposon display or plasmid rescue.
The tobacco Tnt1 retrotransposon was used for *M. truncatula* transformation. As the activity of this retroelement is induced by tissue culture, several hundreds plants were regenerated by using low Tnt copy number lines as source material.

The phenotypic analysis of 61 T1 families (856 plants in total) obtained by insertion of the pSKI074 vector containing four CAM 35S enhancer repeats in *M. truncatula* R108 genotype brought to the choice of three phenotypes of interest: a dwarf phenotype with sterile flowers, a phenotype with reduced apical dominance and high leaf/stem ratio, and a phenotype lacking in haemolytic saponins, estimated by haemolytic test (Jurzysta, 1979). The T2 progenies derived from self-pollination of the original mutants, or of the full-sibs in the case of the sterile dwarf phenotype, have been grown and evaluated. Data derived from the phenotypic screening of the progenies will be presented. In particular, the original phenotype 'absence of haemolytic saponins' was confirmed in all the T2 progeny (29 individuals tested). Further characterization by TLC of the groups of saponins still produced will be presented.