SENESCENCE IN LEAVES AND CELL CULTURES OF M. TRUNCATULA

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Leaves at two different developmental stages, mature and senescent (25% of yellow leaf area), have been collected from climate chamber-grown plants of Medicago truncatula. mRNA was extracted from these leaves and used for cDNA-AFLP analysis to compare the gene expression in mature vs. senescent leaves. By using 32 different combinations of primers we identified about 500 fragments of cDNA differently expressed during leaf senescence. These fragments are being cloned and will be eventually sequenced.

At the same time a cell line (JR) of M. truncatula var. Jemalong has been selected and characterised in its morphogenetical features and physiological growing parameters and for its differentiative capacities: fresh weight, dry weight and cell death percentage. Studying senescence in cell culture offers several advantages. The natural senescence process has been characterized in the JR line, observing the variation of cell death (Evan Blue staining) and DNA analysis (“laddering”).

The differentially expressed genes, isolated in the cDNA-AFLP experiments, will be analysed in leaves and cell culture.