PROTEOME ANALYSIS OF ARABIDOPSIS THALIANA TRANSGENIC PLANTS WITH INCREASED LEVELS OF ENDOGENOUS CYTOKININS

ANALÝZA PROTEOMU TRANSGENNÍCH ROSTLIN ARABIDOPSIS THALIANA SE ZVÝŠENOU HLADINOU ENDOGENNÍCH CYTOKININŮ

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ABSTRACT

Cytokinins are plant hormones that play important roles during plant development and growth. In particular, they influence chloroplast development, nutrient mobilization, delayed senescence, morphogenesis (in association with auxin) and the cell cycle. Light quality and intensity are important factors that affect a range of plant processes. Some effects of cytokinin and light are identical. This fact led us to set up our experiments, whose aim is to identify changes at the protein level in plants grown under different light intensities. In our experiment we used two different light intensities (100 and 200 μmol m^{-2} s^{-1}) and transgenic *A. thaliana* plants with pOp-ipt::35S-LhGR, a construct whose activity is inducible by a suitable activator, generating increases in cytokinin levels. Proteome analysis was performed by 2D gel electrophoresis and subsequent comparison of proteome maps using Decodon Delta 2D software, version 3.6. Total number of resolved spots was 726 and 17 spots showed statistically significant changes indicating presence of differentially regulated proteins. The differentially regulated proteins were identified by MALDI-TOF/TOF. The highest number of changes in protein expression was observed on the fifth day after activation.

Key words: cytokinins, light, proteome, 2D electrophoresis

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