EXPRESSION PROFILE OF SOME GENES INVOLVE IN *NICOTIANA BENTHAMIANA* ALKALOID BIOSYNTESIS PATHWAY UNDER ABIOTIC STRESSES

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Nicotiana benthamiana is one of the important species of solanacea family. The Solanaceae plants produce a variety of interesting biologically active products such as nicotine and tropane alkaloids [1]. Putrescine N-methyltransferase (PMT) is an enzyme that catalyses s-adenosylmethionine-dependent methylation of putrescine in one of the primary steps of nicotine and tropane alkaloids biosynthesis pathway [2]. Two tobacco members of the AP2/ERF-domain transcription factors family called *NtORC1* and *NtJAP1* were shown to upregulate the activity of the *NtPMT* promoter in *N. benthamiana* under environmental stresses [3]. In this study, the expression patterns of *NtPMT*, *NtORC1* and *NtJAP1* in shoots and roots of *N. benthamiana* were examined under methyl jasmonate, UV radiation and wounding treatments. Plants were harvested half an hour after each treatment. The expression pattern of examiened genes showed differences between plant tissues under diffferent treatments. The roots of wounded and UV radiated plants had high expression of *NtPMT* and low expression of *NtPMT* was observed in shoots of MJ treated and UV radiated plants. *NtORC1* was highly expressed in shoots of all treatments and roots of MJ treated plants and had low expression in roots of wounded and unwounded plants. *NtJAP1* was weakly expressed only in shoots of UV radiated plants and roots of MJ treated and wounded plants.

References

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