



Medicago truncatula stress associated protein 1 gene (MtSAP1) overexpression confers tolerance to abiotic stress and impacts proline accumulation in transgenic tobacco

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Auteur	Charrier, Aurélie [1], Lelièvre, Eric [2], Limami, Anis M. [3], Planchet, Elisabeth [4]
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Mots-clés	Abiotic stress [5], Medicago truncatula [6], Proline [7], Seedling [8], Stress associated protein [9]
Résumé en anglais	<p>Stress associated proteins (SAP) have been already reported to play a role in tolerance acquisition of some abiotic stresses. In the present study, the role of MtSAP1 (Medicago truncatula) in tolerance to temperature, osmotic and salt stresses has been studied in tobacco transgenic seedlings. Compared to wild type, MtSAP1 overexpressors were less affected in their growth and development under all tested stress conditions. These results confirm that MtSAP1 is involved in the response processes to various abiotic constraints. In parallel, we have performed studies on an eventual link between MtSAP1 overexpression and proline, a major player in stress response. In an interesting way, the results for the transgenic lines did not show any increase of proline content under osmotic and salt stress, contrary to the WT which usually accumulated proline in response to stress. These data strongly suggest that MtSAP1 is not involved in signaling pathway responsible for the proline accumulation in stress conditions. This could be due to the fact that the overexpression of MtSAP1 provides sufficient tolerance to seedlings to cope with stress without requiring the free proline action. Beyond that, the processes by which the MtSAP1 overexpression lead to the suppression of proline accumulation will be discussed in relation with data from our previous study involving nitric oxide.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua7863 [10]
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