

PROTEOME ALTERATIONS IN KARRIKIN 1 TREATED *ARABIDOPSIS THALIANA* PLANTS

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ABSTRACT

Karrikins represent a recently discovered class of plant growth regulators. They were first discovered in 2003 in smoke from wildfires (Flematti G. R. et al. 2004 and Van Staden J. et al. 2004). Karrikins can positively affect germination and post-germination stage(s) resulting in increased seedling vigour (Soós V. et al. 2009). To date, six members of karrikin family were found in smoke, KAR₁ and its five naturally occurring analogues (KAR₂ – KAR₆), (Flematti G. R. et al. 2009). Positive effects on germination of some karrikin family members were described in many plant species including *Arabidopsis*. To get the first insights on a proteome level into karrikin 1 action in *Arabidopsis thaliana*, we employed 2D electrophoresis followed by gel image analysis (Decodon delta 2D) to detect protein spots differentially regulated in response to karrikin 1 treatment, and MALDI-TOF/TOF MS and LC/MS to identify the corresponding proteins. In total, we identified 115 differentially regulated protein spots and identified 82 proteins which are reportedly involved in numerous cellular processes. Majority of the differentially regulated proteins is located in chloroplast.

Key words: karrikin, proteome, *Arabidopsis thaliana*

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