



## Patterns of protein carbonylation during *Medicago truncatula* seed maturation

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Titre	Patterns of protein carbonylation during <i>Medicago truncatula</i> seed maturation
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Auteur	Satur, Pascale [1], Youssef, Chvan [2], Chatelain, Emilie [3], Ly Vu, Benoit [4], Teulat, Béatrice [5], Job, Claudette [6], Job, Dominique [7], Montrichard, Françoise [8]
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Résumé en anglais	<p>Seeds mainly acquire their physiological quality during maturation, whereas oxidative conditions reign within cells triggering protein carbonylation. To better understand the role of this protein modification in legume seeds, we compared by proteomics patterns of carbonylated proteins in maturing seeds of <i>Medicago truncatula</i> naturally desiccated or prematurely dried, a treatment known to impair seed quality acquisition. In both cases, protein carbonylation increased in these seeds, accompanying water removal. We identified several proteins whose extent of carbonylation varied when comparing natural desiccation and premature drying and that could therefore be responsible for the impairment of seed quality acquisition or expression. In particular, we focused on PM34, a protein specific to seeds exhibiting a high sensitivity to carbonylation and of which function in dicotyledons was not known before. PM34 proved to have a cellulase activity presumably associated with cell elongation, a process required for germination and subsequent seedling growth. We discuss the possibility that PM34 (abundance or redox state) could be used to assess crop seed quality.</p>
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