

# Induced Systemic Resistance (ISR) in *Arabidopsis thaliana* by *Bacillus amyloliquefaciens* and *Trichoderma harzianum* used as seed treatments

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Titre	Induced Systemic Resistance (ISR) in <i>Arabidopsis thaliana</i> by <i>Bacillus amyloliquefaciens</i> and <i>Trichoderma harzianum</i> used as seed treatments
Type de publication	Article de revue
Auteur	Barakat, Illham [1], Chtaina, Nouredine [2], Grappin, Philippe [3], El Guilli, Mohammed [4], Ezzahiri, Brahim [5], Aligon, Sophie [6], Neveu, Martine [7], Marchi, Muriel [8]
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R�sum� en anglais	<p>The <i>Trichoderma</i> fungal species and the bacteria <i>Bacillus</i> species were described as inducers of plant systemic resistance in relation to their antagonistic activity. The objective of this study was to evaluate the effect of selected strains of <i>Bacillus amyloliquefaciens</i> (I3) and <i>Trichoderma harzianum</i> (A) on inducing systemic resistance in <i>Arabidopsis thaliana</i> as a model for plant molecular genetics. The microorganisms were identified and were confirmed for their antagonistic potential in vitro and in vivo in previous studies. In order to explore this mechanism, two mutants of <i>A. thaliana</i> carrying a PR1 promoter (a conventional marker of salicylic acid (SA) pathway) and LOX2 promoter (a marker triggering jasmonic acid (JA) pathway activation) were analyzed after inoculating antagonists. Transgenic reporter line analysis demonstrated that <i>B. amyloliquefaciens</i> I3 and <i>T. harzianum</i> A induce <i>A. thaliana</i> defense pathways by activating SA and JA at a high level compared to lines treated with chemical elicitors of references (acibenzolar-S-methyl (Bion 50 WG (water-dispersible granule)), SA, and methyl jasmonate). The efficacy of <i>B. amyloliquefaciens</i> I3 and <i>T. harzianum</i> A in inducing the defense mechanism in <i>A. thaliana</i> was demonstrated in this study.</p>
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## Liens

- [1] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=39337>
- [2] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=39338>
- [3] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=15605>
- [4] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=39339>
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