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Volatiles produced by *Bacillus mojavensis* RRC101 act as plant growth modulators and are strongly culture-dependent

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Abstract

Volatile organic compounds (VOCs) produced by Plant Growth Promoting Rhizobacteria have recently been investigated due to their role in plant growth promotion and defense. Whereas some bacterial VOCs like 3-hydroxy-2-butanone (acetoin) and 2,3-butanediol produced by strains of *Bacillus subtilis* and *Bacillus amyloliquefaciens* promote plant growth, others like hydrogen cyanide and 3-phenylpropionic acid are phytotoxic, inhibiting plant growth. *Bacillus mojavensis*, a close relative of *B. subtilis*, is an endophytic bacterium of maize that has been shown to have antagonistic activity against the mycotoxigenic phytopathogen *Fusarium verticillioides* and growth promotion activity on maize seedlings. To investigate the growth promotion activity of *B. mojavensis*, *Arabidopsis thaliana* seedlings were grown on 1/2x Murashige & Skoog (MS) medium in divided Petri dishes while bacteria were