

Bacillus Cereus Affects Several Hormone Signalling and Carbohydrate Metabolism Pathways in Nicotinic Tabacum

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Letter to editor

Bacillus cereus is regarded to be useful to plants in a number of ways, including increasing plant growth and producing disease resistance. However, no thorough information on the effect of *Bacillus cereus* on *Nicotiana tabacum* has been published [1]. The molecular mechanisms of the interaction between *B. cereus* and *N. tabacum* were identified using RNA-based sequencing in the current work. From *Bacillus cereus*-inoculated leaves at 6 and 24 hours post-inoculation, a total of 7345 and 5604 differentially expressed genes were found. Plants and microorganisms have a complicated relationship that has evolved over time. *Ralstonia solanacearum*, *Agrobacterium tumefaciens*, and *Dickeya* spp. are only a few examples of pathogens that can affect plants. Wilt disease is caused by the vascular pathogen *Ralstonia solanacearum*; crown gall disease is caused by the biotrophic tumorigenic pathogen *Agrobacterium tumefaciens*; and soft-rot disease is caused by *Dickeya* spp., a potent apoptotic pathogen. Some microorganisms, on the other hand, can behave as commensal organisms, which can help plants grow and develop, as well as increase their tolerance to biotic and abiotic stress. *Streptomyces* spp. and its metabolites, for example, have been discovered to have antagonistic effects on a variety of fungal and bacterial phytopathogens, as well as the ability to boost plant growth productivity in a variety of crops.

Bacillus cereus is a Gram-positive pathogen that causes a wide variety of diseases in humans. It secretes into the extracellular milieu proteins that may contribute directly or indirectly to its virulence. EntD is a novel exoprotein identified by proteogenomics of *B. cereus* [2-5]. We constructed a mutant and analyzed the impact of entD disruption on the cellular proteome and exoproteome isolated from early, late, and

stationary-phase cultures. We identified 308 and 79 proteins regulated by EntD in the cellular proteome and the exoproteome, respectively.

Microbial pathogens are involved in a wide range of severe, and sometimes fatal, human diseases, including nosocomial infections, foodborne infections and toxic shock syndrome. The pathogenesis of the majority of bacterial diseases is a multifactorial process. Five common, crucial steps may be listed: resistance to environmental stresses during infection.

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Conflict of Interest

The authors declare that they are no conflict of interest.

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