Antagonistic and Plant Growth Promoting Activity of *Bacillus* species Isolated from Brackish Environment

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Bacteria of the *Bacillus* sp. are well known to possess antagonistic activity against numerous plant pathogens. In the present study, 11 *Bacillus* sp. were isolated from the brackish environment and assayed for antagonistic activity under in vitro and *in vivo* conditions. Among the 11 isolates tested, 9 isolates effectively inhibited the growth of various plant pathogens, namely *Phytophthora capsici*, *Phytophthora citropthora*, *Phytophthora citricola*, *Phytophthora sojae*, *Colletotricum coccodes*, *Colletotricum gloeosporioides*, *Colletotricum acutatum*, *Rhizoctonia solani*, *Fusarium solani*, *Fusarium graminearum*, *Pyricularia* sp. and *Monilina* sp. The effective isolates were further screened for *Phytophthora* blight suppression in *Capsicum annuum* L. under green house conditions. The isolate SB10 exhibited the maximum (72.2%) reduction in disease severity. The antifungal compounds from the isolate were isolated and characterized. The isolated compounds exhibited high thermo stability (100 ℃ for 30 min). Matrix-Assisted Laser Desorption Ionization-Time of Flight investigation of the antifungal compounds revealed three lipopeptide complexes, the surfactins, the iturins, and the fengycins.