

Antimicrobial Activity of *Thermoactinomyces vulgaris* against some Selected Bacteria and Fungi

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ABSTRACT

Antimicrobial activities of thermophilic microorganisms are of great interest nowadays, as they are potentially important to industry as well as environment. They also provide an eco-friendly means of eliminating microorganisms harmful to human and animal health. Thermophilic bacteria produce antibiotics that display considerable antagonistic potency against pathogenic bacteria and fungi. An obligate thermophile, *Thermoactinomyces vulgaris* was screened against some bacterial and fungal species for its antimicrobial activity by using dual-culture assays. The investigation revealed that wild-type strain (Stock no. 1227) of *T. vulgaris* showed maximum percentage (81%) of inhibition against *Salmonella typhi* followed by *Escherichia coli* (66%) and *Klebsiella pneumoniae* (63%). However, very little antifungal activity was observed against the test fungi, with *Fusarium oxysporum* exhibiting just 10% inhibition of its growth as compared to other fungal strains tested. While tested on *Salmonella typhi*, the wild-type strain (1227) of *T. vulgaris* showed maximum inhibitory activity (81%) against this bacterium as compared to the mutant strains, 1261 (60%), 1278 (78%), 1279 (75%) and 1286 (58%). The production of secondary metabolite HCN and phosphate solubilizing ability of *T. vulgaris* were also checked, as these agriculturally important attributes have been implicated in biological control of plant pathogenic microbes.

Key words: Antimicrobial activity, auxotrophic mutants, obligate thermophile, *Thermoactinomyces vulgaris*

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