

The suppression of *Streptomyces blastmyceticus* strain STS1 on powdery mildew in cucumber

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Powdery mildew caused by *Podosphaera xanthii* is a destructive fungal disease affecting cucurbitaceous crops production. The use of chemical fungicides is an important method for protecting crops against diseases. However, strains of the pathogen causing powdery mildew in cucurbitaceous crops have been reported to develop resistance to the currently used fungicides. On the other hand, biological control by microorganisms is attracted attention for control plant diseases. Recently, we isolated a *Streptomyces* strain, STS1, as a contaminating microorganism from a potato sucrose agar culture plate kept open in a field. In this paper, we report that strain STS1 can protect cucumber from powdery mildew caused by *P. xanthii*. When cucumber leaves pretreated with strain STS1 cell culture were inoculated with *P. xanthii* conidia 24 hours after strain STS1 cell culture pretreatment, lesion formation was inhibited compared to control leaves pretreated with distilled water. The colony formation of strain STS1 was not inhibited at 20-28 °C. Furthermore, colony formation of strain STS1 was not inhibited in the presence of several fungicides. The sequence analysis of 16S rDNA region indicated that strain STS1 exhibited high sequence similarities with *Streptomyces blastmyceticus*. These results suggest that the strain STS1 may be useful for protecting cucurbitaceous crops from powdery mildew caused by *P. xanthii*. However, this protective antifungal substance has not been identified yet. Thus, further studies are required to identify the active antifungal substances secreted in the culture filtrate of strain STS1.

Biography

Rattrikorn Ganphung was graduated from Department of Agricultural and Technology at Thammasat University in Thailand in 2013. Presently she is pursuing Masters in Agriculture and Forest Science, Faculty of Life and Environmental Science at Shimane University, Shimane, Japan.

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