

Postharvest disease control efficacy of the polyene macrolide lucensomycin produced by *Streptomyces plumbeus* strain CA5 against gray mold on grapes

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Abstract

Microbial secondary metabolites have been a valuable source of antifungal compounds for the fungicide industry to develop plant disease control agents. In order to find natural antifungal compounds useful for the control of *Botrytis cinerea* causing postharvest gray mold, we screened microbial culture extracts and found the extract of *Streptomyces plumbeus* strain CA5 which was isolated from the soil sample of Chuncheon Province. The cell extract of CA5 strain markedly reduced the disease incidence of gray mold on grapes to a value of 22.2 % while the non-treated control showed 100 % disease incidence. The active ingredient (CA5A) was identified from the cell extract of CA5 strain using a variety of chromatographic methods and spectroscopic analyses. The structure of CA5A was determined to be the polyene macrolide lucensomycin. Lucensomycin showed inhibitory effects against the spores of *B. cinerea* at a concentration as low as 1 mg L⁻¹ and completely inhibited gray mold development on grapes at a concentration of 100 mg L⁻¹.