

Contribution to the Production of Phenazine Antibiotics Effect Type Compounds by Some Strains of Pseudomonas spp. fluorescent

Authors : Nacéra Benoussaid, Lehalali Meriem, Benchabane Messaoud

Abstract : Our work focuses on the production of compound antibiotic effect of volatile nature namely hydrogen cyanide and the production and identification of molecules phénazinique by some strains of fluorescent Pseudomonas spp isolated from the rhizosphere of some trees for a possible use as bio pesticides antifungal effect and/or antibiotic. We tested the production of hydrogen cyanide of 21 strains of Pseudomonas spp. fluorescent among them 19 strains (90, 47%) showed a positive cyanogenesis. The antagonism test executed in vitro showed that Pseudomonas strains have a higher anti fungal effect relative to their antibacterial effect with diameters of inhibition zones up to 3, 9 cm recorded by the strain F48 against Coleosporiumsp compared with recorded results against bacteria with a maximum inhibition of 1, 26 cm among this antagonistic strain. Three strains were selected by testing for producing phénazines namely PI9, BB9 and F20. The effect of the antimicrobial activity was performed on different culture media (GN, King B, ISP2 and PDA). The results of our study allowed us to retain the King B medium as ideal medium for the production of secondary metabolite. The produced phenazinique compounds was extracted from various organic solvents, and after the results of antibiographie against germs - targets, the extracts of ethyl acetate gave the best results compared to dichloromethane and hexane. The Analysis of these compounds of antibiotic phenazinique effect within layer chromatography (CCM) and high performance liquid chromatography(HPLC) indicate that both strains PI9 and F20 are productive of phenazine-1-carboxylic acid (PCA). The BB9 strain is suspected to be productive of another phenazinique compound.

Keywords : Pseudomonas ssp. fluorescents, antagonism in vitro, secondary metabolite, phenazines, biopesticide.

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