

ABSTRACT

The present study deals with the production of Zn-Bacitracin using *Bacillus* specie using submerged fermentation technique. Thirty-five different isolates of *Bacillus* species were tested, from which only two gave higher yield of bacitracin i.e. GCUBt-5 and GCUBT-21 in shake flask and were selected for further studies. Two testing organisms i.e. *Micrococcus* spp. and *B. licheniformis* were used to check the microbial activity. Seven different fermentation media i.e., M-1, M-2, M-3, M-4, M-5, M-6, M-7 were tested and relatively better Bacitracin production 5.43 & 2.5 mm (*Micrococcus* spp. & *B. licheniformis* respectively) was obtained with M-5 using GCUBt-21. The optimum Bacitracin production 5.98 & 1.9 mm (*Micrococcus* spp. & *B. licheniformis* respectively) was obtained when 48 hrs of incubation period was employed to the medium. 6.12 & 2.35 mm (*Micrococcus* spp. & *B. licheniformis* respectively) inhibition zone was measured at initial pH of 7.5. Temperature is an important parameter for the production and secretion of antibiotic into the broth. Secretion of bacitracin was carried out at 37°C when 6.25 & 2.1 mm (*Micrococcus* spp. & *B. licheniformis* respectively) inhibition zone was observed. Carbon source like glucose and nitrogen source like ammonium chloride were observed best for bacitracin production. Effect of inoculum in terms of age and size for the production of bacitracin were also checked.