ABSTRACT

The present study is concerned with the enhanced production of lovastatin by *Aspergillus terreus* in submerged batch fermentation and the purification of lovastatin. The enhancement of lovastatin production from *Aspergillus terreus* was attempted by ultraviolet and nitrous acid mutagenesis. UV mutants exhibited increased efficiency for lovastatin production when compared with nitrous acid mutants. Among all the mutants developed, *A. terreus* UV-4 was found to be the hyper producer of lovastatin. This mutant gave 3.5 fold higher lovastatin productions than the wild culture of *A. terreus* NRRL 265 and also this mutant was stable for several generations on the production medium.

Various cultural conditions were also optimized for hyper producing mutant strain. 5% (w/v) of glucose, 1.5% (v/v) of corn steep liquor, initial pH value of 6, 120 hrs of incubation period and 28°C of incubation temperature have been selected as best for high lovastatin production.

Production of lovastatin by wild and mutant strains of *A. terreus* was also scaled up to 7 liters Bio Flo 110 laboratory scale fermentor. The fermentation process was conducted at 28°C, 200rpm agitation speed and 1vvm air flow rate without controlling pH and dissolved oxygen during the process. After the optimization of cultural conditions in 250 ml Erlenmeyer flasks and scaling up to laboratory scale fermentor, the mutant *A. terreus* UV-4 gave 8 fold higher lovastatin production (3249.95 µg/ml) than its production by wild strain in shake fermentation flask.

Purification of lovastatin was carried out by solvent extraction method which yielded 977.1 mg/L of lovastatin with 98.99% chromatographic purity and 26.76% recovery. The crystals were also subjected through XRD analysis.