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Abstract

Two potential substrates namely rice bran and unprocessed brown rice indicated positive result of lovastatin existence. *Aspergillus niger* SAR I, our local isolated fungus, took a responsibility to cooperate with those substrates in SSF system. Further experiment including initial profile production, effect of physical parameters (temperature, inoculum size and substrate quantity) and final profile production, were carried out. For initial profile, a basic condition of SSF which consisted 70% (v/w) of moisture content (adjusted to pH 6.0), 5 g substrates mixture (ungrounded size), 1×10^7 spore/ml of inoculum size and incubation temperature at 30 ± 2 °C, was conducted in a flask system and fermented for 7 days. Those conditions allowed 160.03 ± 3.79 mg lovastatin/g dry substrate of lovastatin production during initial stage. After a study of effect of physical parameters, it showed that the optimum temperature was still at ambient temperature (30 ± 2 °C) and substrate quantity of 5 g but different inoculum size (1×10^5 spore/ml). Each parameters specifically temperature, inoculum size and substrate quantity produced 253.98 ± 5.92 mg lovastatin/g dry substrate, 297.64 ± 0.56 mg lovastatin/g dry substrate and 298.72 ± 44.12 mg lovastatin/g dry substrate, respectively. Throughout the final profile, the production was 305.08 ± 14.15 mg lovastatin/g dry substrate which made the total increment hit to almost 91%. In this experiment, lovastatin was subjected into high performance liquid chromatography (HPLC) with acetonitrile and phosphoric acid (pH 3.0) as a mobile phase.

Keywords: Lovastatin, temperature, inoculum size, substrate quantity, SSF, *Aspergillus niger*, HPLC