



ABSTRACT

Kojic acid 2-hydroxymethyl-5-hydroxy-4H-pyran-4 is one of the major secondary metabolites of *Aspergillus flavus*. It is mainly used in pharmaceutical, food and cosmetics. The current study implicated the optimization of a variety of cultural conditions of fermentation medium such as different fermentation techniques, carbon sources and their concentrations, nitrogen source and their concentrations, pH, temperature, incubation. The highest kojic acid (11.70 g/L) was obtained by *Aspergillus flavus* at 10% glucose, 0.5% yeast with initial pH 4 and incubation was given for 12 days at 30°C and 180 rpm. It was concluded that maximum kojic acid yield achieved by optimization of conditions for fermentation. The kojic acid was purified after following a series of steps and extracted needles were identified by measuring melting point and treatment with ferric chloride. Antibiotic activity was also evaluated against *Styphylococcus aureus*, *Escherichia coli* and *Candida albicans*. Kojic acid exhibited antibacterial activity against all three microorganism investigated in the present study.