

## Production of antimicrobial agents from *Aspergillus fumigatus* isolated from local soil sample

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**Abstract :** Since the 1928, fungi have been used for the production of antimicrobial compounds as secondary metabolites. Fungi was isolated from soil sample and identified as *Aspergillus fumigatus* depending on morphological and molecular diagnostics. Purified *Aspergillus* isolate was screened for antimicrobial production activity and test the effect of fermentation media, pH, temperature, sugar concentration and duration on the productivity and optimized to determine the optimal conditions for antimicrobial metabolite production. The optimal production condition of antimicrobial metabolite was observed in Potato dextrose solid media under pH 6.5 and incubation temperature 30°C. Antimicrobial activity of fungal extract was tested against test pathogenic bacteria and fungi. The fungal extract was tested against ten pathogenic bacteria and ten pathogenic fungi. Antibiotic described using three chemical test (Fourier transformed infrared spectroscopy (FTIR), Nuclear magnetic resonance (NMR), Euro EA Elemental Analyzer (CHNS)) to detect the chemical formula for the extracted compounds. The aim of these researches to screening for antimicrobial producing fungi from local soil sample.

**Key words:** *Aspergillus fumigatus*, antimicrobial compounds, optimal conditions, solid media.

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