Screening of different *Aspergillus* sp. producing kojic acid and increasing the efficiency by ultra violet mutagenesis

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**Abstract:**
The interest in kojic acid, an organic acid, is enormously increasing especially in cosmetic industry. Kojic acid is biologically produced by different types of fungi like *Aspergillus* sp. during aerobic fermentation. Although, several potential kojic acid producing strains have been isolated, very little attention has been paid to the improvement of the strains by mutation techniques. In this research the potential of various *Aspergillus* sp. in kojic acid production and increasing the efficiency by ultra violet mutagenesis were studied. Different fungal strain *A. flavus* (PTCC 5004), *A. fumigatus* (PTCC 5009), *A. terreus* (PTCC 5283), *A. niger* (PTCC 5012) and *A. oryzae* (PTCC 5163) were aerobically cultured in Czapek-Dox media (30 °C, 150 rpm). The supernatant of culture media were used for kojic acid estimation according to Bentley’s colorimetric method in different time intervals. Spors from the best kojic acid producer were subjected to UV light (254 nm) for different periods of time (5, 10, 20, and 40 min). The best mutant was selected in 96-well plates after incubating for 2 days, followed by addition of 10 μl of ferric chloride (1%). Increase of kojic acid concentration by the improved mutant was confirmed by shake flask fermentation. Only *A. terreus* (PTCC 5283) prepared the maximum kojic (5.6 g/L) acid after 16 days under aerobic condition (30 °C, 150 rpm). The screening of different mutant revealed that the best exposure time to UV light is 5 min which prepare a mutant with ability to produce kojic acid 2 fold more than non-mutated strain.

Conclusion: UV mutagenesis can be used for improvement of kojic acid production by *A. terreus*.

**Keyword:** Screening, Aspergillus sp, Kojic acid, Ultra violet mutagenesis