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**R**ESEARCH **P**APER

# Isolation, identification, partial purification, optimization and characterization of alkaline protease from *Neisseria flavescence*

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Microbial alkaline proteases are among the important hydrolytic enzyme and have been used extensively since the advent of enzymology. Bacterial extracellular alkaline proteases are of great importance due to its wide spectrum applications in detergent industries, bioremediation, food industries, and leather processing and bio-film degradation. From the various niches eighteen isolates were screened for alkaline protease production, out of which four isolates showed efficient alkaline protease production. Out of four bacterial species one of the isolate *i.e. N. flavescence* showed significant enzyme activity. Optimization of the pH and temperature conditions for enzyme production was determined and was found to be 7.0 and $60^0$C, respectively. Optimization of carbon, nitrogen sources and metal ions for enzyme production were determined and was found to be 4.64U/ml for sucrose, 0.91U/ml for gelatin and 0.21U/ml for zinc chloride for the isolates. The yield of alkaline protease was inhibited by copper sulphate. Enzyme activity was assayed using tyrosine-casein method. The purified enzyme preparations of having enzyme activity 0.26U/ml was also excellent in destaining of ink colour. The molecular weight of different bands of alkaline protease from *N. flavescence* ranged from 25kD to 83kD.

**Key words :** *Neisseria flavescence*, Alkaline protease, SDS, Sucrose, Gelatin, Zinc chloride, Copper sulphate

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