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Strain improvement, production and stability of Nattokinase from UV mutant strain of *Pseudomonasaeruginosa* CMSS

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Abstract: Nattokinase (NK) is a potent fibrinolytic enzyme , which belongs to the second large family of serine proteases. NK gain significant attention in the treatment of hypertension and cardiovascular disorders (CVD's). Thus, a number of NK producers have been extensively studied, especially *Pseudomonas* sp. has extended the production level than *Bacillus* sp. with different properties. Thus the current study precedes with the strain improvement of NK producing UV mutated *Pseudomonas aeruginosa* CMSS by chemical mutagenesis. The potent mutant strain UV-EMS, treated with Ethyl Methyl Sulphonate (EMS) showed maximum NK activity. The maximum production of NK from mutant strain was determined at optimized parameters like pH 5 (1315.8 U mL^{-1}), temperature at 37^{o}C (2413.3 U mL^{-1}), shrimp shell as nitrogen source (2355.0 U mL^{-1}) and sucrose as carbon source (3930.0 U mL^{-1}).The activity of partially purified NK was stable at pH 7, temperature at 10^{o}C and 5mM of $MgCl_2$. The stability of NK was partially inhibited by SDS and completely inhibited by EDTA. The partially purified NK showed74% of *in vitro* clot lysis activity.
Keywords : Nattokinase, *Pseudomonas aeruginosa*, chemical mutagenesis, optimization , stability, clot lysis.

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