ABSTRACT

Accumulation of fibrin in the blood vessels usually results in thrombosis leading to myocardial infarction and other cardiovascular diseases For thrombolytic therapy, microbial fibrinolytic enzymes have now attracted much more attention than typical thrombolytic agents because of the expensive prices and the undesirable side effects of the latter In our present study we have identified a highly potent fibrinolytic enzyme producing bacteria isolated from the fermented food sample, indigenous to North- East India by undertaking morphological biochemical and molecular approach and done statistical optimization of the process parameters for the production of fibrinolytic enzyme from the bacteria Based on the morphological and biochemical studies, the bacterium was found to fall under the genus *Pseudomonas* From the 16S rDNA sequencing data the bacterium was found to show maximum sequence similarity with the species *Bacterium enrichment culture Clone* CL-9, while from the 16S-23S ISR region sequencing data, it showed maximum sequence homology with the Bacillus species *Bacillus subtilis* From the initial screening data, the bacteria is found to show maximum fibrinolytic activity at pH 11 0 carbon source casein, nitrogen source potassium nitrate and incubation time of 48 hrs From the statistical analysis, using Plackett-Burman design the factors carbon source (casein), and incubation time were found to be significant for fibrinolytic enzyme production From the interaction study done with the help of RSM the fibrinolytic enzyme production was found to be maximum at high level of casein and lower incubation time