Abstract

Among the several hydrolytic enzymes, lipases find extensive use in medicine and industry. The current research aimed to develop a method for isolating lipase enzyme from bacterial isolated. From six different samples, including soil, leaf, and water, sixty bacterial strains were isolated and cultured on M9 medium. Out of sixty eleven bacterial isolates showed lipase production when quantitatively screened rhodamine agar medium. Among these four isolates (S2, S10, S11 & L1) were selected based on fluorescence intensity for further qualitative screening by using shake-flask technique. The isolate L1 showed maximum activity of lipase (5.815 U/mL) and was identified as *Bacillus siamensis* using 16s rRNA analysis. Lipase production by *Bacillus siamensis* was maximum at 47°C and pH 7.0 ± 0.5 during submerged fermentation. Using response surface methods, the highest possible enzyme activity was determined to be 19.09 U/mL. Ammonium sulphate precipitation was carried out from 60-80% (w/v) ammonium sulphate and it was observed to be precepted at 70%.