ABSTRACT

Biosurfactants are the surface-active molecules that are produced by the vast number of microbes. These compounds have the ability to reduce the surface tension at surface and interface respectively. The present study was aimed to isolate and identify biosurfactant producing bacteria from the soil and sewage water. Twenty total samples were collected ten from the different automobile workshops of Pattoki, Lahore and ten water samples from various domestic and industrial drains of Lahore. Twenty-eight morphologically different types of bacterial colonies were obtained from the samples. The isolated strains were screened for the production of biosurfactant by CTAB agar test, Blood agar test, oil displacement test, drop collapse test, emulsification and surface tension measurement and TLC. 10 isolate were found positive for biosurfactant production. Out of ten isolates, 2 strains (E_{3-1}, E_{2-2}) were highly positive for the production of biosurfactants and showed 82.3%, 70.5% emulsion layer and 36 mN/m, 36.6 mN/m surface tension respectively. TLC analysis of strain's biosurfactants was mainly lipopeptide in nature. Our results indicated that these isolated strain have the potential of bioremediation of organic and inorganic contaminated areas.

Key words: Biosurfactants, CTAB agar, emulsification measurement, lipopeptide nature, bioremediation,