



ABSTRACT

In the present study the rhamnolipid production was carried out employing the *Bacillus* sp. and fungal strain FS11 using submerged fermentation. The glucose and sucrose were the optimal carbon sources for the bacterial strain SR18 and the fungal strain FS11 in the respective order. The biosurfactants produced from the strains SR18 and FS11 reduced the surface tension of water from 72mN/m to 34 mN/m and 29 mN/m, respectively. The extracted rhamnolipids from the two strains SR18 and FS11 were forming stable emulsions with various oils and the highest emulsification index was recorded as 80% and 71% using motor oil in the respective order. The TLC indicated that the recovered biosurfactants from the two respective strains were glycolipids in nature. The qualitative analysis of the isolated biosurfactants from both strains using biochemical tests indicated the presence of carbohydrates and lipids while absence of amino acids. The rhamnolipid produced from the both the strains showed remarkable foaming abilities. The stability of the isolated rhamnolipids from the potential strains was maintained at high temperature (121 °C), various pH values (2-14) and at high NaCl concentration (3-18%). These qualities make them applicable in various fields including bioremediation, food industry, pharmaceuticals and for a range of other industrial processes.
