White the removal of petroleum hydrocarbons clean-up of

White Biotechnology, a key technology of the 21st century which has potentially large benefits with the wide range of applications, both economically and ecologically is steered substantially by Enzymes.

Enzymes are extensive biological molecules responsible for thousands of chemical interconversions. Search for a low-cost novel or a broad range of stable and functional enzymes especially lipases (third largest enzyme groups) for different applications by most of the white biotechnology industries from microbial origin has been the target of research right now/at present. Lipases (triacylglycerol lipase, EC 3.

1. 1. 3) are ubiquitous enzymes that catalyze the hydrolysis of a wide range of carboxyl esters (Yuan et al., 2016). Lipase producing microorganisms have been found in diverse habitats (https://doi. org/10.

1016/j. bcab. 2017. 10. 011 article in press). It is evident from the literature that most of the studies related to isolation of lipase-producing microorganisms were reported on terrestrial bacteria, fungi, actinomycetes from various/different sources and only a few were on marine actinomycetes specifically Streptomyces sp.

, a predominate group for the industrial production of enzymes and secondary metabolites. The oily/oil contaminated/oil effluent environment may provide a good environment/be a prominent source of isolation of lipase-producing microorganisms. Continuous contamination of coastal marine ecosystem at Visakhapatnam harbour by crude oil (hydrocarbon and non-hydrocarbon), oil, grease, and petroleum products in the event of an oil

spill or effluent discharge from engine oil vehicles due to/during ship trafficking, men’s impacts i.

e., continuous carelessness and negligence of anthropogenic activities etc., constitute serious effects/stress on the marine flora and fauna (Michael, 1977). The microbial response to an oil spill at sea is dependent on numerous factors, including the oil composition and degree of weathering, as well as environmental conditions, particularly temperature and nutrient concentrations.

Individual populations of microbes do not function alone in nature. The self-construction of a functioning community is central to microbial success. In a typical oil spill effect, when the damage occurs profoundly at the level of individual organisms, pollutions are more resilient In time, from several perturbations caused by oil spills.

Within the marine ecosystem, marine microorganisms have a varying degree of natural resilience to changes within their habitats. This in-built resilience means that some microorganisms are able to withstand a certain level of contamination by oil. Alternatively, the hydrocarbons (water soluble fractions) are absorbed by living organisms/cells especially marine microorganisms and metabolized exemplifying the eco-sustainable bioremediation in the removal of petroleum hydrocarbons/ clean-up of oil contaminated/polluted sites/environments and thereby mitigating ecosystem damage.

A well designed microbial consortium will have complementary catabolic pathways, as well as the potential to disperse and make the hydrocarbons

readily bioavailable. Therefore, novel microorganisms or natural evolutionary mutants should be bioprospected and screened for bioremediation and biodegradation approaches. The purpose of the present study is to isolate lipase producing marine Streptomyces as well as check its potential to produce antimicrobial metabolites from oil contaminated marine sediment sample of Visakhapatnam harbor.