CONCLUSION

Pulmonary tuberculosis patients harbouring drug resistant strains redundant to available antituberculous drugs are left with no choice of treatment. Majority of actinomycetes from rare ecosystems in the present study showed antimycobacterial activity (72%) while only 50% were active against other pathogens. Such rich source of secondary metabolites exhibited diverse pattern of antagonistic activity. Liquid culture based assays are ideal for testing anti TB activity of uncharacterised extracts/compounds and luciferase reporter phage assay was employed for this purpose.

Strain D25 identified as a novel Streptomyces species from Thar desert, Rajasthan was found to inhibit gram positive bacteria and M. tuberculosis, the bioactive pigment being produced only on solid culture, though. Conditions where the strain could produce mycelia did not lead to bioactive pigment production unlike many. The active component of this promising strain belongs to the class of actinomycins endowed with a low MIC value (0.78 -12.5 μg/ml). Presence of additional carbonyl groups adds uniqueness to its structure. It is the first reported pigmented antituberculous compound from novel Streptomyces species from Indian desert. Compound D25A is a potential candidate for the development of anti-TB drug against drug resistant tuberculosis. Further studies including animal testing should credit for its suitability for human administration eventually adding this ideal novel drug to the updated armamentarium of TB drugs.