ABSTRACT

The global prevalence of multi-drug resistant pathogens is becoming a serious concern for health care practitioners and it is predicted that in imminent decades, very little remedial formulations in the form of antibiotics will be available, if novel antimicrobial formulations are not formed. In this tenure, bioactive compounds are readily a good source for the production of new antimicrobial drugs. These compounds have amazing therapeutic potentials as these possess antimicrobial, antioxidant, anticancer and anti-diabetic properties with many other health benefits. In this study, camel urine is used as potent liquid for analyzing bacteria that showed antimicrobial activity with potential biofilm formation. The highest biofilm forming ability of pathogens was observed at day 7th of incubation in which C8, C9 and C12 showed maximum values. Isolates C4, C8 & C9 showed antibacterial efficacy while C9 & C12 have antifungal potential. Further, metabolites from these isolates were extracted by using n-butanol solvent extraction method and analyzed by LC-MS (Liquid chromatography- Mass spectrometry) technique. The metabolites were then undergo antimicrobial screening by agar well diffusion assay in which extracellular metabolites of C4 isolate showed maximum zone of inhibition against *S.aureus* (19.9-20.1mm) and whole-cell metabolites of isolate C8 against *M.sciuri* (22.7-22.9mm). Others isolates showed medium level of activity. Whole cell metabolites of both isolates C5 and C12 have maximum antifungal potential against *Neurospora sp.* and *M. mucidae*. The minimum inhibitory concentration MIC and minimum bactericidal concentrations/minimum fungicidal concentrations along with other activities like antibiofilm and biofilm dispersal activities of effective metabolites are also recorded that aid the concentrations dependant dose formulations of metabolites that might be used for production of contemporary drugs against multi-drug resistant microbes.

Key words: Multi-drug resistant, anti-microbial, n-butanol, extra-cellular and whole-cell metabolites, LC-MS analysis, antibiofilm, biofilm dispersal