



ABSTRACT

The biological active secondary metabolite parietin was extracted from wild and mutant strain of lichen *X. parietina*. Six different solvents (acetone, ethanol, methanol, hexane, chloroform and distilled water) were used to extract parietin. The parietin activity was found to be maximum when extraction was carried out with 3 ml of methanol at 30°C for one hour. All the extracts were further proceeded to carry out the antibacterial activity against different strains of bacteria and fungi. Methanol extracts showed strong antibacterial activity followed by ethanol and hexane extract. After optimizing the conditions, the parietin was extracted from EMS and MMS treated strain of *X. parietina*. Mutant concentration 0.5 mM exhibited strong parietin activity as compared to other concentrations. The extracts of EMS treated strain revealed strong antimicrobial activity (22 mm for bacteria & 19 mm for fungi) as compared to wild type and MMS strain. It was founded that with increased mutant exposure time parietin activity decreased in terms of antibacterial activity. DPPH scavenging activity was highest (84 ± 3.36) with 3 ml methanolic extract of MMS treated strain. Similarly, reducing power of methanolic extract of EMS treated strain was found to be 14.3 and 45 % strong reduction potential than MMS treated strain and wild type strain, respectively. TF content was higher in methanol extract of EMS treated strain. The optimized conditions for extraction of parietin included 150 mg biomass at 35°C for 60 min with shaking speed of 120 rpm, with 3ml of methanol solvent. It was further concluded that the extraction of parietin from EMS & MMS treated strain not only revealed the strong parietin activity but maximum antibacterial and antioxidant activity as well, and thus could be used in health biotechnology.