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Screening of indigenous environmental bacteria for production of bioactive compounds (BaCs) and their genes

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Our environment is a rich source of microorganisms including bacteria and fungi that can produce significant bioactive compounds (BaCs). These microbes have been shaping their environment and thus the earth's biosphere for billions of years through an enormous range of BaCs. These days, as a result of far-reaching research, the study of microbial BaCs is recognized as an essential component of natural products chemistry and as well as considerable environment friendly compounds, which have various industrial and agricultural applications. In Pakistan the knowledge regarding the indigenous microbes capable of producing BaCs is in very early stages. Our purpose of this study was to screen two microbes CMGN122 and CMGN370 isolated from Sindh, Pakistan for production of BaCs and their genes. Biological screening samples from microbial fermentation extracts were obtained after optimizing growth conditions and extraction procedures that capture BaCs produced. Column chromatography (CC) and TLC were used for isolation and compound identification and, structure elucidation was done by different techniques of NMR and Mass Spectrometry. CMGN122 identified as *Pseudomonas aeruginosa* (GenBank Accession No. JN969597) was found to produce three different Phenazine compounds and pyrroloquinoline quinone (Pqq). CMGN370 identified as *Candida sp*. (GenBank Accession No. JN969598) showed production of two compounds Daidzein and N-(5-Acetylamino-pentyl)-acetamide. Genes for phenazines and PqqC were isolated and amplified.

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