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Analysis of plant origin antibiotics against oral bacterial infections using in vitro and in silico techniques and characterization of active constituents.

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The pervasiveness of oral bacterial infections in diabetic patients is a serious health concern that may produce severe complications. We investigated 26 Ayurvedic medicinal plants traditionally used for treatment of the oral bacterial infections with the aim to look for new promising drug leads that can be further employed for herbal formulation design. The plants were grouped into three categories based on traditional usage. All plant extracts were examined for antibacterial, antibiofilm and antiquorum-sensing properties. The plants with significant activities including Juglans regia, Syzygium aromaticum, Eruca sativa, Myristica fragrans, Punica granatum and Azadirachta indica were further analyzed using HPLC-DAD-QToF and GC-MS. In silico and in vitro activity was evaluated for selected constituents. Finally, it could be concluded that eugenol and 2-phenylethylisothiocyanate are major contributors towards inhibition of bacterial biofilms and quorum sensing.

Biography

Abdul Hafeez Rafey has completed his studies in NPRL in Gomal Centre of Pharmaceutical Science. He is present working as a Faculty of Pharmacy in Gomal University located in Dera Ismail Khan 29050, Pakistan.