Abstract

Honey has being used as natural medicine since ancient times for treating infectious diseases. Different floral honeys have different chemical components that contributed to antimicrobial, antiviral, antioxidant and anticancer properties of honey. Manuka honey is a dark monofloral honey rich in phenolic contents, and currently it is gaining much attention for its antimicrobial activity. Methylglyoxal (MGO), dihydroxyacetone (DHA), leptosperin, and lepterdine are known to be mainly responsible for the antimicrobial activity of Manuka honey. The current study represents the comparison of Manuka honey with Pakistani Wild, premium Sidr, organic Sidr and Multifloral honey. The antimicrobial assay showed that Manuka honey was most effective as compared to Pakistani honey samples with 38 mm zone of inhibition against bacterial strains. The MTT assay demonstrated that none of the honey samples showed any significant anticancer activity; only premium Sidr honey had shown 10.7% inhibition. In antioxidant power assay Wild honey was found with the highest value (196 ASE/g H), DPPH (2,2-diphenyl-1-picrylhydrazyl) assay (71.33 %inhibition) and total phenolic contents (56.11 mg GAE/g Honey) whereas organic Sidr honey was found to have highest electrical conductivity (0.532 mS). The chemical component of Manuka and Pakistani honeys compared through ^{1}H NMR, methylglyoxal was only found in Manuka honey as it is marker for this specific honey. Collectively, total 37 compounds were identified in all honey samples. The comparison suggests that Pakistani branded natural honeys are of good quality and they may have significance as that possessed by Manuka honey.