ABSTRACT

This study was designed to evaluate the analysis of caffeine present in different samples of *Camellia sinensis* leaves (green tea), that may be used in different medicinal applications. Extraction of sample arranged from different region of Pakistan was carried out by using ultra-sonication in 40:60 aqueous ethanol solvent. High performance Liquid Chromatography (HPLC) is performed for analyses of caffeine in different samples of green tea which show the presence of caffeine in all the sample with Epigallocatechin and epicatechins. Antioxidant activity, total phenolic content and total flavonoid content is highest in the sample A. The highest total phenolic contents i.e., 125.33± mg gallic acid equivalent per gram dry extract were observed for leaf extract of Camellia sinensis of sample A whereas total flavonoid contents of ethanolic extracts of Sample A was 58.20±1.34 and 78.52±1.65 mg rutin equivalent per gram dry extract, respectively being the highest. Antimicrobial activity is determined and inferences proposed that green tea act as effective antimicrobial agent and effectively inhibit the growth of both gram-positive bacteria and gram-negative bacteria.