

ABSTRACT

Ionic liquids refer to organic salts that are liquid below 100 °C. ILs possess unique properties such as; negligible vapor pressure, inflammability, high thermal and chemical stability and biodegradability. Their tunable properties, by the choice of suitable cations and anions make them extremely useful. In the present research work ten pyridinium based ILs were synthesized. Their radical scavenging efficiency was determined by DPPH and ABTS assays. It was observed that ILs which are substituted with longer alkyl chain on nitrogen show greater antioxidant potential. Moreover, ILs that contain chloride anion showed better results. Thus, 1-(sec-butyl)-2,4,6-tris(methoxycarbonyl)pyridin-1-ium chloride showed maximum antioxidant activity whereas, 2,4,6-tris(methoxycarbonyl)-1-methylpyridin-1-ium iodide showed least antioxidant potential. Antibacterial activity was evaluated by broth dilution method against *E. coli*. ILs with longer alkyl substituent on N atom of cation, showed better results as compared to ILs having shorter alkyl chain substituted on N.