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1-Butyl-2,3-Dimethylimidazolium Bis (Trifluoromethanesulfonyl) Imide and Titanium Oxide Based Voltammetric Sensor for the Quantification of Flunarizine Dihydrochloride in Solubilized Media

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Abstract : Titanium oxide nanoparticles and 1-butyl-2,3-dimethylimidazolium bis (trifluoromethane- sulfonyl) imide modified glassy carbon electrode (TiO2/IL/GCE) has been fabricated for electrochemical sensing of flunarizine dihydrochloride (FRH). The electrochemical properties and morphology of the prepared nanocomposite were studied by electrochemical impedance spectroscopy (EIS) and transmission electron microscopy (TEM). The response of the electrochemical sensor was found to be proportional to the concentrations of FRH in the range from 0.5 µg mL-1 to 16 µg mL-1. The detection limit obtained was 0.03 µg mL-1. The proposed method was also applied to the determination of FRH in pharmaceutical formulation and human serum with good recoveries.

Keywords : flunarizine dihydrochloride, ionic liquid, nanoparticles, voltammetry, human serum
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