



Original Research Article

Determination of Magnesium (II) by a Coated Graphite Electrode Based on Risperidone as an Ionophore

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ABSTRACT

In this research, a coated graphite electrode was constructed for determination of Mg^{2+} in pharmaceutical supplements. The designed sensor demonstrates an ideal Nernstian slope ($30.1 \text{ mV. Decade}^{-1}$) over a wide concentration range (1×10^{-6} - $1 \times 10^{-1} \text{ Mol L}^{-1}$). The selectivity of the sensor was evaluated over 16 different cations by matched potential method and no serious interference was observed from them. The designed electrode could also be used in partially non aqueous mediums up to the presence of 20% of organic solvents without any tangible alteration in Nernstian slope and linearity domain. The response time and life span of the proposed electrode were 20s and 2 months respectively. The function of the electrode was inspected in solutions with different pH value and also as an indicator electrode in potentiometric titration with EDTA.

Keywords: Magnesium, Potentiometry, Ion selective electrode, Risperidone