Complexation Based Voltammetric Determination of Pantoprazole Sodium in Pharmaceutical Formulations and Rabbit Plasma

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Abstract:

Square wave adsorptive stripping voltammetric (SQWASV) method has been utilized to confirm and elucidate the possible complexation reaction between pantoprazole sodium and cobalt as a transition metal in Britton- Robinson buffer (pH=7.0). The current signal due to the oxidation process was a function of the amount of pantoprazole sodium, pH of the medium, cobalt concentration and accumulation time at the electrode surface. The oxidation peak current has varied linearly with the concentration over the range of 0.1-9.0 nM. The limit of detection was found to be 0.04 nM. The validity of the method was successfully applied for the determination of pantoprazole sodium in pharmaceutical formulations with a pharmacokinetic study in rabbit plasma. The simplicity, rapidity, sensitivity and selectivity of this method make it a very attractive alternative to the other existing methods in the quality control laboratories.

Keywords:

SQWASV · pantoprazole sodium · pencil graphite electrode · cobalt · pharmaceutical analysis · rabbit plasma

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