

Flow-injection amperometric determination of ranitidine after derivatization producing 2-methylfuran cation as an electroactive compound

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Abstract

The new developed method for the electrochemical determination of ranitidine is optimized in flow injection analysis. Through the derivatization of ranitidine in an acidic environment with sodium nitrite, deaminating ranitidine and forming the electroactive species 2-methylfuran cation, it was possible to determine ranitidine at a lower potential at the glassy carbon paste electrode modified with anionic surfactant sodium dodecyl sulphate (SDBS). At optimized conditions such as pH, operating potential, flow rate, SDBS concentration, the method has an application in the concentration range from 1 to 600 mg/L ($R^2=0.996$) and LOD 1.3 mg/L. The determination of ranitidine with the new method in tablets and ampoules has been carried out successfully and the results are within the confidence limits with 95% reliability compared to the reference method with HPLC.

Keywords: Ranitidine, Surfactant, Flow injection system, Glassy carbon paste electrode.

References

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