

## Galvanostatic coulometry in the analysis of natural polyphenols and its use in pharmacy

Ziyatdinova G., Nizamova A., Budnikov G.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

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### Abstract

Stoichiometric coefficients are found for the reactions of electrogenerated halogens and hexacyanoferrate(III) ions with natural polyphenols, namely, rutin, quercetin, and dihydroquercetin, and also with ascorbic acid. The number of electrons participating in the reactions with hexacyanoferrate(III) matches the number of hydroxyl groups in the analyte molecules, which is reflected by the respective reaction schemes. In the determination of the specified compounds in model solutions, the value of RSD was 0.4-6%. A procedure for the direct quantification of polyphenols in pharmaceuticals by the reaction with hexacyanoferrate is proposed; it is proved applicable for the quality control of medications; RSD does not exceed 7%. The variation of titrants, i.e., iodine and hexacyanoferrate, makes possible the determination of phenols in the presence of ascorbic acid. © 2010 Pleiades Publishing, Ltd.

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### Keywords

galvanostatic coulometry, polyphenols