

**Development of spectrophotometric procedure
for iron (II) containing medications quantification**

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The modern arsenal of drugs for the treatment of iron deficiency suggests the wide enough range of iron supplements, most of which contain ferrous cations.

The methods of quantitative analysis of these drugs are associated usually with the determination of iron (II) cation. However, these methods often have certain disadvantages associated with insufficient accuracy, or economic inefficiency. Therefore, the expansion of the arsenal of methods for the quantitative determination of iron (II) containing medications is of current interest [1].

We suggested the procedure for the spectrophotometric quantification of ferrous sulphate heptahydrate based on obtaining the colored complex with nitroso-R-salt, which is used for the determination of certain metals [2].

It was found that ferrous-nitroso-R-salt complex has the absorption maximum at 721 nm (water solution). By its parameters this maximum corresponds to the requirements for an analytical range and was used for the spectrophotometric quantification.

It was shown that in the range of concentrations of water solutions of ferrous sulphate heptahydrate from $1 \cdot 10^{-5}$ to $4.5 \cdot 10^{-5}$ g/ml these solutions submit the combined *Beer-Lambert-Bouguer* law.

The validation characteristics of the suggested technique were studied. It was shown that in the case of the specific absorbance method the uncertainty of an individual result is 5.90 % and the uncertainty of a mean is 2.41%, and in the case of the method of standard these values are 3.38% and 1.38 % correspondingly.

Thus, the developed procedure proved to be reliable enough and can be used for the quantification of iron (II) containing medicinal preparations.

References:

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