

## DETERMINATION OF METHIONINE BY REACTION WITH POTASSIUM HYDROGENPEROXOMONOSULPHATE

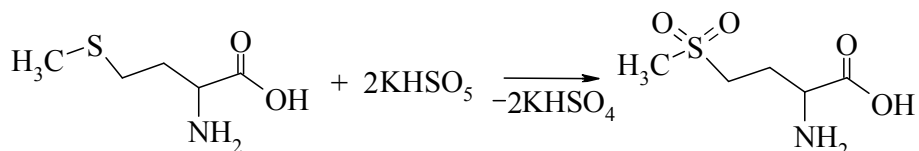
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Methionine - (2RS)-2-amino-4-(methylthio)butyric acid, (Met) which is necessary for growth maintenance and nitrogen equilibrium of a living organism, is among essential amino acids in compliance with chemical structure and is widely used in medical practice.

The SPU recommends using acidimetric method for determination of content ground substance of Met. According to this method determination demands relatively large sample weight of Met and using toxic solvents. Procedures of iodometric method for determination of agent are described in literature. The disadvantage of this method is duration (0.5-4 hours). The new oxidation-reduction reaction, named S-oxidation of Met by potassium hydrogenperoxomonosulphate (PMS) in the medium of the phosphate buffer solution (pH 7.8-8.2) was suggested by us as analytical for Met. It is determined by kinetic method that oxidation reaction of atom sulfur of Met to sexivalent state (formation of the conformable sulfonic derivation,  $\text{MetSO}_2$ ) by potassium hydrogenperoxomonosulphate is passed comparatively quickly (4 min) and quantitatively (presented on the scheme). This oxidant is characterized by higher stability in water solution unlike iodine solution and oxidation process of sulfide group is passed more selectively.



The thin layer chromatography was used for identification of the formed reaction product (Silufol<sup>®</sup>, n-butanol- $\text{CH}_3\text{COOH-H}_2\text{O}$  (60:25:15),  $R_f=0.25\pm 0.05$ ; Sorbfil, n-butanol- $\text{CH}_3\text{COOH-H}_2\text{O}$  (60:25:15),  $R_f=0.42\pm 0.05$ ). According to the researches the new method for the semi-microdetermination of content ground substance of Met was worked out. This method is based on measurement by the iodometric titration method of the reagent ( $\text{KHSO}_5$ ) quantity, which is used on interaction with Met. The RSD for the determination of content ground substance of Met was 0.72%. The accuracy for analysis results of Met was tested by „introduced - found” ( $\delta=+0.5\%$ ). Advantages of the suggested method are higher sensitivity (0.05 mg) and expressivity (to 7 min).