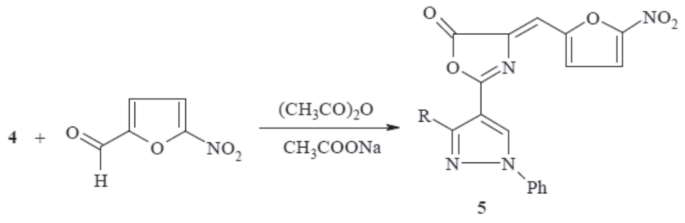
Pyrazole-containing azlactones 5 where produced by condensation of acids 4 with 5-nitrofurfurol with a purpose of finding compounds with bactericidal properties. The structure of synthesized compounds was reliably proven using methods of chromato-mass spectrometry and NMR-spectroscopy.



The results of preliminary bioscreening have shown high antimicrobial activity of azlactones' derivatives 5.

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A METHOD TO DETERMINE FALSIFICATION OF THE WHITE DRY WINE WITH SUCROSE

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A standard method of the reducing sugars determination using Fehling-Muller reagent has been modified and applied to control presence of sucrose in the white dry wine that may be considered as an indication of its falsification. Natural dry wine should not consist of any significant amounts of sucrose since its content in regular grape is below 0.9 wt % and it should be fermented almost completely in course of wine manufacturing. However, some sucrose can be added to the source wine materials by fraudulent producers in order to accelerate the fermentation. This results in a higher content of residual sucrose in the dry wine that can exceed the maximum permitted level of 4 g/l.

The proposed method involves comparison between results of the inverting sugars determination in two parallel series: one of which undergoes preliminary sugars inversion while the other one does not. A possible difference in the sugar content values obtained by these methods would correspond to the content of sucrose in wine materials.

Our modified method of the reducing sugars determination has been tested on some white wines obtained from regular stores and showed good durability and reproducibility. No relevant evidence of falsification has been found though intentionally added sucrose samples were in fact detected. The method can be used to determine the residual sucrose concentration above 1.33 g/l, which is even below the minimum permitted sucrose content in the standard table white wines.

Therefore, the method of the residual reducing sugars content determination is suitable for analysis of possible wine falsification with sucrose. However, excessive sulphites and other reducing preservatives present in some wines (especially in the low-grade samples) should be removed in advance because of possible distortion of the analysis results. The method can not be applied directly to the red and some other wines with intense colour and/or containing considerable amounts of natural reducing agents and tannin-like compounds. Extra attention should be given to application of this method in case of analysis of the low-grade wines.

Potentially, this method can also be developed to analyze wine blending samples and to control their affinity by the ratio between reducing and non-reducing sugars contents.

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AGE-RELATED CHANGES OF GLUTATHIONE REDUCTASE ACTIVITY IN THE LIVER OF ALLOXAN DIABETIC RATS

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In recent years, a considerably increasing number of people have been found to be affected with diabetes mellitus. Aging and diabetic mellitus are characterized by oxidative stress. It is known that oxidative damage to tissue macromolecules and decreasing the activity of antioxidant system seem to increase during aging.

Glutathione system is one of the main antioxidant systems. Diabetic mellitus is characterized by decreasing the activity of main antioxidant enzymes and the level of reduced glutathione. The cell regenerates reduced glutathione in a reaction catalyzed by glutathione reductase using NADPH as a source of reducing electrons in the liver and other tissues of the body. Changes in the ontogenesis glutathione reductase activity in the liver of rats against the background of diabetic mellitus have not been studied enough.

The object of this experimental research was to ascertain the influence of aging on the activity of glutathione reductase in the liver of alloxan diabetic rats. 48 male albino rats, two age groups: I- the - 2-month (late puberty), and II - 4-month (adult) were involved in the study. Alloxan diabetes was evoked via injecting the rats with a 5% solution of alloxan monohydrate intraperitoneally in a dose of 170 mg/kg. The animals were divided into the following groups: 1)