

Частина II

ТЕЗИ

STUDY OF ANTIRADICAL AND ANTIOXIDANT PROPERTIES OF SOME NOVEL THIAZOLE AND TRIAZOLE CONTAINING XANTHINE DERIVATIVES

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Introduction. A survey of literature reveals represent the biological properties of heterocycle containing compounds (xanthines, pyrazoles, thiazoles etc). They are very important structural units in drug discovery that showed wide spectrum of pharmacological activity including hypoglycemic, anticancer, antioxidant, anti-inflammatory, bronchodilator and xanthine oxidase inhibitory effects. A lot researchers proved that combination of several heterocyclic systems in one molecule could improve pharmacological properties.

Aim of our work was a study of antioxidant properties of thiazole and triazole containing xanthine derivatives.

All compounds were synthesized at the department of Biological chemistry of Zaporizhzhya State Medical University. Their structures were proved by modern method of physicochemical analysis (NMR- and IR-spectroscopy, elemental analysis and mass-spectrometry).

Material and methods. Antioxidant activity of synthesized compounds were studied *in vitro* with using of several methods:

- inhibition of protein oxidative modification;
- inhibition of NO-radical;
- inhibition of lipoperoxydation.

Study of antiradical activity was provided with using of *in vitro* method based on the non-enzymatic reaction of epinephrine oxidation into adrenochrome in the presence of alkali. This process accompanied by accumulation of free oxygen anion-radical O^{2-} . Speed of this process in biological systems depends from superoxide dismutase activity, but in chemical system *in vitro* this reaction could be used for estimation of antiradical activity of compounds.

As etalon drugs we used N-acetylcysteine, emoxypine and dibunole.

Results. Provided researches showed, that almost all tested xanthine derivatives showed antioxidant and antiradical activity and some of them were more active than etalon drugs. Obtained data also allowed to found some dependence at "structure – activity" relations.

Conclusion. Obtained results showed that research of antioxidant drugs among heterocycle containing xanthine derivatives is prospective direction of pharmaceutical science.