

# SEARCH OF POTENTIAL LOW TOXIC ANTIBACTERIAL DRUGS AMONG NOVEL ALKYL 3-BENZYL-8-PROPYLXANTHINYL-7-ACETATES

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**Introduction.** One of the most important problems of modern pharmaceutical science is search of novel low toxic compounds with antibacterial properties. This is caused by high resistance of microorganisms to a lot of antibacterial drugs, that is result of bacteria mutation. Nowadays, many scientists study ability of usage novel heterocyclic compounds as antibiotics and xanthine derivatives is one objects for their research.

**Aim** of our research was study of antibacterial properties of novel alkyl 3-benzyl-8-propylxanthinyl-7-acetates.

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.** Research were provided according to the manual «Research of specific activity of antibacterial medicines». We prepared a series of two-fold serial dilutions of studied xanthine derivatives in Mueller-Hinton broth in a volume of 1 ml. After this, we added 0.1 ml of a microbial suspension (10<sup>6</sup>mk / ml) to each tube. Minimal inhibition concentration was determined by the absence of visible growth *in vitro* with a minimum concentration of the drug, the minimum bactericidal concentration (MBC) - by the absence of growth after sowing. As the solvent used dimethylsulfoxide. Concentration of Initial solutions were 1 mg/ml. As standard tests we used *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*. The standard drug "Ceftazidime" was used as compare standard. Definition of standard drug activity was carried out by a similar method.

**Results.** As result of provided experiment we found, that almost all tested xanthine derivatives showed antibacterial activity and some of them were more active than "Ceftazidime". Obtained data also allowed to found some dependence at "structure – activity" relations. It should be noted that increasing of alkyl radical length caused influence on the severity of activity.

**Conclusion.** Obtained results showed that research of antibacterial drugs among xanthine derivatives is prospective direction of pharmaceutical science.