

# DETERMINATION THE QUANTITATIVE "STRUCTURE – ANTIBACTERIAL ACTIVITY" RELATIONSHIPS IN A SERIES OF N-SUBSTITUTED AMINO ACIDS

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**Introduction.** The presence of the antibacterial and antifungal activity in derivatives of amino acids is determined by different mechanisms; therefore, a promising field of research is to obtain new N-substituted amino acids and study their antibacterial action.

**Aim.** To determine the quantitative "structure – antibacterial action" relationships in a series of N-substituted amino acids.

**Material and Methods.** The quantitative dependencies of the antibacterial action of the compounds studied on AlogPs values were calculated using the STATISTIKA 8 program.

**Results.** The satisfactory values of the levels of correlation of AlogPs parameters calculated with the experimental data of the antibacterial activity of N-substituted amino acids against *S. aureus*, *E. coli*, *P. vulgaris*, *P. aeruginosa*, *B. subtilis*, and *Cl. perfringens* are statistically significant. The absence of the relationship between the antibacterial effect against *C. albicans* and the structure of threonine derivatives may indicate a possible role of the latter in the metabolism of these fungi.

## Conclusions.

1. To determine the quantitative "structure – antibacterial action" relationships the correlation and regression analysis of the AlogPs values calculated for N-substituted amino acids taking into account the results of the experimental study of the antibacterial action of the compounds under research has been conducted.
2. The statistically significant correlation values of AlogPs with the values of the antibacterial action of N-substituted amino acids against *S. aureus*, *E. Coli*, *Pr. Vulgaris*, *P. Aeruginosa*, *B. Subtilis*, *C. Albicans* and *Cl. perfringens* have been determined, and it quantitatively confirms the earlier assumptions of the existence of the "structure–action" relationship in this series of compounds and the degree of its manifestation.