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# Antimicrobial Activity and Toxicity of New Macrocyclic and Acyclic Derivatives of 1, 3-Bis(Alkyl)-Chinazoline-2, 4-Dione

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The urgency of the problem of new antimicrobial drugs development is determined by constant appearance of multi resistant micro organisms.

Previously it was shown that 1, 3-bis(alkyl)-6(5)-substituteduracilcontaining onium groups have a wide range of antimicrobial activity and low cytotoxicity in experiments on mammalian cells [1, 2 ].

We have studied antimicrobial activity, mechanism of action, cytotoxicity and genotoxicity of new macrocyclic and acyclic derivatives of 1, 3-bis(alkyl)-chinazoline-2, 4-dione. The studied compounds have been tested for antimicrobial activity in relation to standard test strains of several pathogenic bacteria andfungi.The most active compoundswere investigated against resistant strains of Staphylococcus aureus.It has been found that the main structural factor influencing antimicrobial activity of compounds is atype of an alkyl radical in the onium group.

It is shown that the macrocyclic and acyclic derivatives of 1, 3-bis(alkyl)-chinazoline-2, 4- dione have a high antibacterial activity against S. aureus strains resistant to ciprofloxacin and ammoxicillin. Antimicrobial activity against standard test strains of bacteria and fungi is manifested at the level of well-known drugs.

The investigated compounds do not exhibit genotoxicity, show low cytotoxicity to mammalian cells andinhibite the glucose dehydrogenases activity of Staphylococcus aureus 209P and Candida albicans 855-653.

Thus, a new class of biologically active compounds, which may be of significant interest for the development of new promising antimicrobial agents, was investigated.

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**Biography:**

Dr. A D Voloshina is a senior researcher with PhD degree in the International research and innovation center of neurochemistry and pharmacology of A.E. Arbuzov Institute of Organic and Physical Chemistry;the head of the microbiology laboratory in A.E. Arbuzov Institute of Organic and Physical Chemistry Subdivision of the Federal State Budgetary Institution of Science “Kazan Scientific Center of Russian Academy of Sciences”, Kazan, Russia. Her professional interests focus microbiological and cytologic researches in the field of pharmacology and medicine.