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SYNTHESIS, STRUCTURE AND ANTIMICROBIAL ACTIVITY OF NOVEL PHOSPHABETAINES DERIVATIVES

*Bakhtiyarov D.I.*¹, *Gerasimov A.V.*¹, *Shulaeva M.P.*², *Pozdeev O.K.*², *Egorova S.N.*³, *Bakhtiyarova Yu.V.*¹, *Galkin V.I.*¹, *Galkina I.V.*¹

¹ Kazan Federal University,

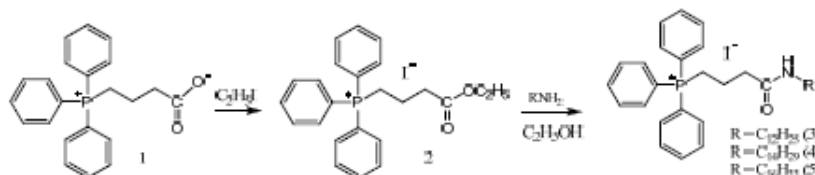
² Kazan State Medical Academy,

³ Kazan State Medical University, Kazan, Russia

Graduate Student

dmbakh@mail.ru

The search for novel agents to combat resistant bacteria has become one of the most important areas of antibacterial research today. Organic and pharmaceutical chemists are trying to synthesize new drugs with better pharmacokinetic and dynamic properties. In this study, we prepared triphenyl-substituted phosphonium salts (3-5) on the base of phosphobetaine (1) – 4-(triphenylphosphonio)butanoate containing alkyl chains of various lengths.



The synthesis of such compounds is very difficult in comparison with ammonium analogs. In the past years, our group carried out regular research on the synthesis, structure, and reactivity of phosphobetaines on the basis of tertiary phosphines and unsaturated carboxylic acids [1-3]. All betaines easily react with alkyl halogenides with short alkyl chains to form the corresponding phosphonium salts without biological activity (example compound 2) [1-3]. Microbiological results indicate that the synthesized phosphonium salts 3 – 5 possess a broad spectrum of activity against the tested microorganisms. Every newly synthesized compound was characterized by elemental analyses, IR, ¹H NMR, ¹³C NMR and ³¹P NMR spectral studies.

References

- [1] V.I. Galkin, Y.V. Bakhtiyarova et al., *Phosphorus, Sulfur, and Silicon and Related Elem.*, 1999, V.144-146, P. 918-920.
- [2] V.I. Galkin, Y.V. Bakhtiyarova et al., *Heteroatom Chem.*, 2006, V.17, P. 557-566.
- [3] I.V. Galkina, N.B. Melnikova et al., *Pharmaciya*, 2010, V.3, P. 47-49.

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