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SYNTHESIS, STRUCTURE AND ANTIMICROBIAL ACTIVITY OF NOVEL PHOSPHABETAINES DERIVATIVES

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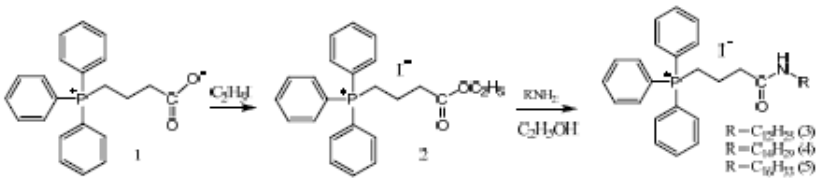
The search for novel agents to combat resistant bacteria has become one of the most important areas of antibacterial research today. Organic and pharmaceutical chemists are trying to synthesize new drugs with better pharmacokinetic and dynamic properties. In this study, we prepared triphenyl-substituted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



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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 phosphabetaines 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, ^{1}H NMR, ^{13}C NMR and ^{31}P NMR spectral studies.

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