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Synthesis of carboxylate arsenobetaines based on (carboxyalkyl)triphenylarsonium halides

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Abstract

© 2015 Pleiades Publishing, Ltd. It has been found that the reaction of triphenylarsine with unsaturated carboxylic acids (acrylic, maleic, and itaconic ones) supposed to yield the arsenobetaines does not occur, in contrast to similar reactions of carboxylic acids with tertiary phosphines. However, the interaction of tertiary arsines with the halogenated carboxylic acids has resulted in the corresponding tertiary arsonium salts, dehydrohalogenation of the latter affording the target carboxylate betaines in the quantitative yield; the products structure has been elucidated using a set of chemical, physical, and physico-chemical methods. Antibacterial activity of the prepared compounds has been studied.

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Keywords

arsenobetaine, quaternary arsonium salt, unsaturated carboxylic acid