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Synthesis of new liophilic functionalized aminomethylphosphine oxides and their acid-base and membrane-transport properties toward acidic substrates

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Abstract

A large number of new lipophilic mono- and bisphosphinylamines including those possessing additional potential centers of coordination was synthesized on the basis of the Kabachnik-Fields reaction, and acid-base and membrane transport properties of the synthesized compounds toward the mono- and polybasic carboxylic acids were studied. By their basicity all the synthesized aminophosphine oxides were shown to be inferior to their aliphatic amine precursors. Introduction of the second phosphinyl group so strongly decreases the basicity that the determination of pKa by potentiometric method becomes impossible. Interrelation between the structure of aminophosphinyl carrier and substrate and the efficiency of the membrane transport of acidic substrates are discussed. © 2009 Pleiades Publishing, Ltd.

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