AN ESTIMATION OF THE POTENTIAL ACTIVITY OF NEWLY-SYNTHESIZED ACYCLIC ORGANOPHOSPHOROUS COMPOUNDS

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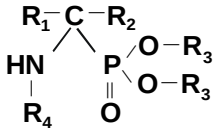
Aminophosphonates are very important considering their biological activity. Among them one can find herbicides, pesticides, neuromodulators, inhibitors of proteases and others. The aminophosphonates investigated in this study are acyclic compounds with hydrocarbon chains of different lengths substituted at the nitrogen, carbon and phosphorus atoms. Thus, they included a variety of compounds of different polarity and lipophilicity. The role of those factors was determined by their ability to destroy planar lipid membranes (BLMs). The general structure of the aminophosphonates and their particular substituents are as follows:



Compound no.	R_1	R_2	R_3	R_4
1	CH_3	C_3H_7	C_4H_9	C_4H_9
2	CH_3	CH_3	i-C_3H_7	C_8H_{17}
3	CH_3	CH_3	C_4H_9	$C_{14}H_{29}$
4	CH_3	C_4H_9	i-C_3H_7	$C_{10}H_{21}$
5	CH_3	C_4H_9	C_4H_9	C_5H_{11}

It was found that the most active compounds were those with iso-propyl substituents at their phosphorus atom (compounds 2 and 4). The results obtained may be helpful in the rational synthesis of new compounds for biological application as herbicides.

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