

This article was downloaded by:

On: 28 January 2011

Access details: Access Details: Free Access

Publisher Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713618290>

Effects of Some Phosphorylacetic Acid Hydrazides on Periferal Cholinegic Neurotransmission

E. Bukharaeva^a; E. Nikolsky^a; I. Semina^a; R. Tarasova^a; A. Baychourina^a; V. Pavlov^b

^a Kazan State Medical University, Kazan, Russia ^b Kazan State Technological University, Kazan, Russia

To cite this Article Bukharaeva, E. , Nikolsky, E. , Semina, I. , Tarasova, R. , Baychourina, A. and Pavlov, V.(1999) 'Effects of Some Phosphorylacetic Acid Hydrazides on Periferal Cholinegic Neurotransmission', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 147: 1, 379

To link to this Article: DOI: 10.1080/10426509908053669

URL: <http://dx.doi.org/10.1080/10426509908053669>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Effects of Some Phosphorylactic Acid Hydrazides on Peripheral Cholinergic Neurotransmission

BUKHARAEVA E.^a, NIKOLSKY E.^a, SEMINA I.^a, TARASOVA R.^a,
BAYCHOURINA A.^a and PAVLOV V.^b

^a*Kazan State Medical University, Butlerov str., 49, Kazan, 420012, Russia and*

^b*Kazan State Technological University, K.Marx str., 68, Kazan, 420015, Russia*

Cholinergic deficit has received considerable attention with respect to the development of therapeutic agents designed to ameliorate the cognitive symptomatology of the dementias. The influence of (2-chloroethoxy) (p-N,N-dimethylaminophenyl) phosphorylactic acid hydrazide (CAPAH) and diphenylphosphorylactic acid hydrazide (PHOSENAZID) on the processes of the synaptic transmission in the neuromuscular synapses of frog and rat was studied. Experiments revealed that the effectiveness of CAPAH was concentration-dependent: in low concentrations (10 - 100 nM) neuromuscular junction miniature end-plate currents (MEPC) were attenuated by 15 - 20 % (sensitising effect); at higher concentrations (0,1 mM) MEPC amplitude was reduced. This effect was similar to that seen with blockers of the sodium channel component of the nicotinic receptor. The HCl-salt of CAPAH also had a sensitising effect in low concentrations (1 - 10 nM). By contrast, PHOSENAZID was not effective at low concentrations. These differences in the effects of CAPAH and PHOSENAZID on cholinergic neurotransmission appear dependent in changes in the phosphyl fragment of the molecule.

ACKNOWLEDGEMENTS

The authors thank the BRITISH TECHNOLOGY GROUP (London, U.K.) for financial support of this research.