

## SCREENING RESEARCH OF NEW PYRIMIDINE DERIVATIVES ANTICONVULSANT ACTIVITY

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The prevalence of epilepsy among diseases of central nervous system is third. The number of patients in the world exceeds 50 million. Treatment of epilepsy is a difficult task, up to 25-30% of patients have multi-drug resistance and a significant number of antiepileptic drugs have dangerous side effects (eg. phenytoin, carbamazepine, lamotrigine, phenobarbital). Therefore, the development and preclinical study of potential antiepileptic drugs is problematic. Under supervision of prof. V. Georgiyants 43 original compounds of pyrimidine derivatives were synthesized at the Department of Pharmaceutical Chemistry, National University of Pharmacy, which are promising for clinical study. Some of these compounds on the results of PASS-forecasting have high probability of anticonvulsant activity.

**Aim.** Rate anticonvulsant activity of pyrimidine derivatives compounds on basic screening model.

**Materials and methods.** It has been used basic screening model – pentylenetetrazole (PTZ) seizure test in mice. Control group received PTZ at a dose of 90 mg/kg subcutaneously. Bioactive compounds were administered at a dose of 50-100 mg/kg through a tube into the stomach 20-30 minutes before PTZ injection. As a reference drug used valproate sodium ("Depakin", Sanofi-Aventis, France) at a dose of 300 mg/kg into the stomach.

**Results and Discussion.** As a result of screening bioactive compounds were proved two leaders with codes KS78342 and KS78303 (100 mg/kg), which significantly increased the survival rate at the level of valproate sodium. Compound KS78553 (50 mg/mg) significantly reduce the number of generalized tonic-clonic seizures one animal. Another 6 compounds proved tend to increase survival and/or reduce the severity of seizures, 29 – proved proconvulsant effect of varying degrees, and 5 were indifferent.

**Conclusion.** The results allow to predict the potential anticonvulsants presence among leading compounds. For in-depth study leading compounds and their anticonvulsant activity must continue pharmacological study of their mechanism of action, spectrum of anticonvulsive action, others concurrent pharmacological activity, dose-dependent effect and safety.