World Academy of Science, Engineering and Technology
International Journal of Pharmacological and Pharmaceutical Sciences
Vol:11, No:05, 2017

The Actoprotective Efficiency of Pyrimidine Derivatives

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Abstract : There have been studied effects of xymedon and six new pyrimidine derivatives, that are close and distant analogs of xymedon, on rats' working capacity in the test 'swimming to failure'. It has been shown that a single administration of the studied compounds did not have a statistically significant effect in the test. In the conditions of multiple intraperitoneal administration of the studied pyrimidine derivatives, the compound L-ascorbate, 1-(2-hydroxyethyl)-4.6-dimethyl-1.2-dihydropyrimidine-2-one had the lowest toxicity and the most pronounced actoprotective effect. Introduction in the dose of 20 mg/kg caused a statistically significant increase 440 % in the duration of swimming of rats on the 14th day of the experiment compared with the control group. Multiple administration of the compound in the conditions of physical load did not affect leucopoiesis but stimulates erythropoiesis resulting in an increase in the number of erythrocytes and a hemoglobin level. The substance introduction under mixed exhausting loads prevented such changes of blood biochemical parameters as reduction of glucose, increased of urea and lactic acid levels, what indicates improvement in the animals' tolerability of loads and an anti-catabolic effect of the compound. Absence of hepato and cardiotoxic effects of the substance has been shown. This work was performed with the financial support of Russian Science Foundation (grant № 14-50-00014).
Keywords : actoprotectors, physical working capacity, pyrimidine derivatives, xymedon
Conference Title : ICP 2017 : International Conference on Pharmacology
Conference Location : Paris, France
Conference Dates : May 18-19, 2017