Pharmacological Reports
2007, 59, 739–751
ISSN 1734-1140

Pharmacokinetics of a synthetic interferon inducer amixin in mice

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Abstract:
Pharmacokinetics of amixin, a synthetic interferon inducer, has been studied in mice under intravenous and oral routes of administration. Following oral administration, 80% of the drug was eliminated in the unchanged form. Its absolute biological availability comprised 0.7. In comparison to oral administration, after intravenous injection concentrations of amixin and its radioactive metabolites were higher during the first 5–120 min of the experiment in all organs and tissues. During the first 4–24 h, we observed an increase in the total radioactive material that was similar for both modes of administration. Low drug elimination rate was noted under both conditions. A novel integral model-independent method for estimation of equilibrium tissue-to-plasma partition ratios (K_p) has been proposed. The suggested integral parameter K_p does not depend on the structure of the kinetic scheme and, most importantly, could be used for analysis of incomplete kinetic curves. We also propose a combined model that could help determine parameters of irreversible xenobiotic binding, the extent of the absorption from the intestine and relative efficacy of the hepatic excretion, in particular presystemic drug elimination.

Key words:
amixin (tilorone), distribution, xenobiotic mass transfer, area under curve