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# INHIBITION OF TUMOR GROWTH IN DISULFIRAM TREATMENT OF FIBROSARCOMA INOCULATED TO HAMSTERS

Kosta J. Popović[1], Dušica J. Popović[2], Dejan Miljković[2], Dušan Lalošević[2], Ivan Čapo[2] and Jovan K. Popović[3]

[1]*Department of Pharmacy, Faculty of Medicine, University of Novi Sad, Novi Sad, Republic of Serbia,*
[2]*Department of Histology and Embryology, Faculty of Medicine, University of Novi Sad, Novi Sad, Republic of Serbia,*
[3]*Department of Pharmacology, Toxicology and Clinical Pharmacology, Faculty of Medicine, University of Novi Sad, Novi Sad, Republic of Serbia*

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## INTRODUCTION

We investigated the anticancer effect of an clinically used anti-alcoholism drug disulfiram on *an in vivo* solid tumor model of fibrosarcoma in hamsters. Disulfiram inhibits growth of various cultured cancer cell lines.[1-3].

## OBJECTIVES

Objective of the research was to prove that disulfiram inhibits growth of fibrosarcoma inoculated to hamsters.

## METHOD / DESIGN:

20 Syrian golden hamsters of both sexes (10 males and 10 females), weighing approximately 70 g, were randomly allocated to experimental and control group (10 hamsters/group). 2 x $10^6$ BHK-21/C13 cells in 1 ml were injected subcutaneously into the animals' back in both groups. The experimental group started peroral treatment with disulfiram 200 mg/kg daily via a gastric probe 3 days before tumor inoculation. After 19 days, when the tumors were approximately 2-3 cm in the control group, all animals were sacrificed. The blood was collected for glucose and other analyses. The tumors were excised and weighed and their volume (by water displacement method) and diameters were measured (Figure). The tumor samples were histologically and immunohistologically assessed and the main organs toxicologically analyzed. Tumor volume was also determined using the formula $LxS^2/2$, where L was the longest and S the shortest diameter. Ki-67-positive cells in the tumor samples were quantified; images were taken and processed by software UTHSCSA Image Tools for Windows Version 3.00. Statistical significances of differences in tumor weight, volume, number of Ki-67-positive cells and other parameters were determined by the one way ANOVA.

## RESULTS

Disulfiram inhibited fibrosarcoma growth in hamsters without toxicity and without influence on blood analyses.

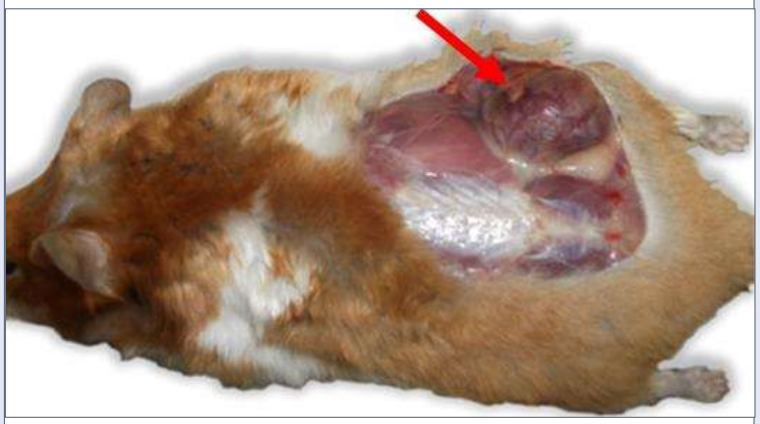

Figure. BHK fibrosarcoma: subcutaneous localization in a hamster

## CONCLUSIONS

Inhibition of proteasome activity by disulfiram as an anti-tumor strategy might be an effective and safe therapeutic approach in novel nontoxic therapies and relapse prevention for human cancers.

## ACKNOWLEDGEMENTS

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## CONTACT

Corresponding author:
jovan.popovic@mf.uns.ac.rs;
jovapopmf@gmail.com