

**WORKSHOP
ON
BIOLOGICAL ACTIVITY
OF
METALS AND METAL
COMPOUNDS**



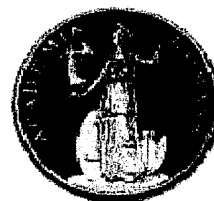
PROGRAMME AND ABSTRACTS

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THE WORKSHOP IS ORGANIZED BY
THE INSTITUTE OF EXPERIMENTAL PATOLOGY AND
PARASITOLOGY
UNDER THE AUSPICES OF
THE BULGARIAN ACADEMY OF SCIENCES
AND
THE ROMANIAN ACADEMY

Bulgarian Academy of Sciences



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Session C.

PARASITES AND METALS

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ANTIOXIDANT STATUS IN HELMINTHOSES AFTER TREATMENT WITH NEW METAL COMPOUNDS

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The parasitic diseases are widespread and cause large economic damages in the domestic animals and plants. Mineral substances play an important role in the metabolic disturbances of parasitoses.

The aim of our study was to investigate the effect of newly synthesized compounds of Zn, Mn, Co and Cu on the antioxidant (vitamin C and E, Zn, Co, Mn Cu, SOD and CAT) and physiological (mortality and body weight gain) status in the infected with helminths host. Investigated experimental host-parasite systems were chickens infected with *Ascaridia galli* (Nematoda) and rats infected with *Fasciola hepatica* (Trematoda). Newly synthesized compounds were: $(Zn_xCu_y)_2(OH)_3Cl$; $(Zn_xMn_{1-x})_4(OH)_6SO_4 \cdot 2H_2O$; $(Zn_xCo_yCu_{1-x-y})_4(OH)_6 \cdot SO_4 \cdot 2H_2O$ and $(Zn_xCo_yMn_{1-x-y})_4(OH)_6 \cdot 2H_2O$. The levels of the both vitamins, trace elements and SOD activity were reduced in the livers in the infected hosts. Developed antioxidant imbalance in the host was depend on the parasite and host species, parasite localization and toxicity. The application of $(Zn_xCu_y)_2(OH)_3Cl$ and $(Zn_xCo_yMn_{1-x-y})_4(OH)_6 \cdot 2H_2O$ influenced positively the antioxidant imbalance and restored body weigh losses and reduced mortality. The rest salts did not show any effect on the infected host. Newly synthesized salts could be used for a control of helminthoses by improvement of the antioxidant defense system of the host.