APIROM LAOCHAROENKEAT : EFFECTS OF CADMIUM IN COMBINATION WITH MERCURY AND MANGANESE ON THE FUNCTIONS OF ISOLATED RAT LIVER MITOCHONDRIA. THESIS ADVISOR: ASSO.PROF. PRAKORN CHUDAPONGSE, Ph.D., 106P. ISBN 974-578-854-6

Combination of 1 μM cadmium with 1 to 10 μM of mercury or manganese increase the inhibition of state 3 respiration as well as monoamine oxidase activity and increase the stimulation of ATPase activity by isolated rat liver mitochondria. With cadmium and mercury combination , the inhibition of state 3u respiration is significantly enhanced. However, manganese when combined with cadmium reduces the inhibitory effect of cadmium on state 3u respiration. Significant increase in the inhibition of calcium-stimulated respiration was observed with manganese plus cadmium. The diminution of state 3 respiration produced by these heavy metals can be reversed by EDTA and DTT ; but the former cannot alleviate the decrease in state 3 respiration induced by mercury.