

##C475285 : MAJOR PHARMACOLOGY

KEY WORD:

GEMFIBROZIL / RAT LIVER MITOCHONDRIA

KAMONWAN PRAPASSIRIPAN : EFFECTS OF GEMFIBROZIL ON THE FUNCTIONS OF ISOLATED RAT LIVER MITOCHONDRIA. THESIS ADVISOR : ASSO. PROF. PRAKORN CHUDAPONGSE, Ph.D., 142 pp. ISBN 974-582-638-2

The effects of gemfibrozil on the functions of isolated rat liver mitochondria have been studied. Gemfibrozil has dual actions on mitochondrial respiration. This compound behaves as classical uncouplers by stimulating state 4 respiration and activating ATPase activity of isolated mitochondria. It also acts as respiratory chain inhibitor by inhibiting complex I of mitochondrial respiratory chain leading to reduction in state 3 and 3u respiratory rate. These effects impair the coupling between oxidation and phosphorylation and reduce mitochondrial ATP synthesizing capability. The gemfibrozil-induced decrease in hepatic ATP synthesis may be involved in the molecular mechanism of blood lipid-lowering action of this drug. In addition, mitochondrial calcium efflux has been found to be stimulated while monoamine oxidase activity is unaffected by gemfibrozil. It is possible that long term administration of gemfibrozil may adversely affect liver functions due to diminished intracellular ATP level.