Thesis Title : Effect of vitamin E on cholesterol metabolism in rabbits.

Name : Chaveewon Porntadavity

Degree : Master of Science (Biochemistry)

Thesis Supervisory Committe :

Dr. Prayad Komaratat

Dr. Prapon Wilairat

Dr. Pichit Tosukhowong

Date of Graduation : 27 May 1988

ABSTRACT

The purpose of this study was to find out the mechanism for the hypocholesterolemic effect of vitamin E in rabbits. The animals were fed a purified basal diet deficient in vitamin E and were supplemented with varying amounts of DL- ∝ -tocopherol acetate, namely 21, 210 and 2,100 mg/week for 10 weeks.

There was a significant increase in plasma cholesterol in rabbits supplemented with only corn oil after 6 weeks. Increased vitamin E supplementation reduced plasma cholesterol level. In liver, cholesterol and phospholipid contents were not significantly different in rabbits supplemented with varying amount of vitamin E. The activity of HMG-CoA reductase was also not affected by high level of vitamin E. Liver membranes prepared from rabbits supplemented with these amounts of vitamin E showed no

differences in total binding with ^{125}I-LDL, indicating that the number of LDL receptors did not increase as the amount of vitamin E supplementation increased. The results of in vitro binding were consistent with the finding that the clearance rates of ^{125}I-LDL in rabbits supplemented with varying amounts of vitamin E were not significantly different.

These results suggested that decreased plasma cholesterol in vitamin E supplemented rabbits did not involve cholesterol metabolism in liver. The decreased plasma cholesterol in vitamin E supplemented rabbits may be due to a decrease in absorption of cholesterol.