

ABSTRACT

THESIS: The Influence of Age on the Effect of Dietary Supplementation with Reduced Glutathione (GSH) on Mitochondrial and Cytosolic GSH Levels in Rat Kidney Cortex and Medulla

STUDENT: Bingwei Ye

DEGREE: Master of Science

COLLEGE: Science and Humanities

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This study investigated whether exogenous supplementation with reduced glutathione (GSH) increased kidney mitochondrial and cytosolic GSH levels in young and old female Lewis rats. The young rats were 3 months of age and old rats were 22 months old. The rats were divided into a young control group (n=8), an old control group (n=5), a young experimental group (n=7), and an old experimental group (n=7). Rats in the young and old control groups did not receive any treatment, while rats in both the young and old experimental groups were injected with GSH (250 mg/Kg of body weight) into the peritoneal cavity once a day for a week. At the end of the injection period, the rats were anesthetized and kidneys were harvested. The mitochondrial and cytosolic fractions were separated from rat cortex and medulla by differential centrifugation. GSH concentrations were measured using a spectrophotometric assay. Both mitochondrial and

cytosolic GSH levels in kidneys from young and old female Lewis rats were significantly increased with GSH supplementation. The results indicate that kidneys from both young and old rats respond to exogenous dietary supplementation with GSH.