The role of liver CYP1A1 and CYP2E1 enzyme activities and lipid peroxidation level in diabetic rats

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Diabetes mellitus is one of the most common metabolic disease in which pancreas no longer produce enough insulin or the body cannot use it efficiently. Many studies have implicated that the increased oxidative stress is associated with the progress of diabetes and diabetic complications. Cytochrome P450 monooxygenases are one of the sources of reactive oxygen species in diabetes and lipid peroxidation may occur as a result of oxidative damage. The increased lipid peroxidation may cause cellular retardation, abnormality of blood coagulation, hypertension and cardiovascular disease in diabetic patients. The expression of CYP450 enzymes may be affected by various pathophysiological conditions such as diabetes, hypertension and cancer. It has been reported that the expressions and activities of CYP1A1, CYP2E1 and other drug metabolizing enzymes alter in diabetes. In this study, we used streptozotocin-induced diabetic rats, insulin treated streptozotocin-induced diabetic rats and control group to investigate how diabetes affects liver CYP1A1 and CYP2E1 enzyme activities and lipid peroxidation level. We observed that insulin regulates liver CYP1A1 and CYP2E1 activities and lipid peroxidation level in rats.

Biography

Gökçe Kuzgun has done her graduation from Hacettepe University, Faculty of Pharmacy in 2012. She also works as a Junior Patent Examiner at the Turkish Patent Institute. Currently, she is doing her Master's degree in the Department of Pharmaceutical Toxicology at Ankara University.

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