**Investigation of in Vitro Effects of Some Antibiotics on Chicken Heart Glutathione S-Transferase Enzyme Activity**

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**Abstract**

Glutathione S-transferase enzyme (GST; EC 2.5.1.18) is a very important antioxidant enzyme that plays important functions in living metabolism. Glutathione S-transferases have been identified as a Phase-II detoxification enzyme family. Xenobiotics, which originate from exogenous or endogenous sources, transform into metabolites with lower toxicity that are easily excreted from the living organism as a result of Phase II reactions. During this event, GST takes part in reactions that enable the conjugation of glutathione with many metabolites that may cause toxicity.

This study was carried out in two stages. First of all, the GST enzyme was purified and then the in vitro effects of some antibiotics on the purified GST enzyme activity were examined. GST enzyme was purified from chicken heart tissue by preparation of homogenate, ammonium sulfate precipitation and glutathione-agarose affinity chromatography. In the kinetic studies conducted with the purified GST enzyme, it was determined that the antibiotics amoxicillin, cefuroxime sodium and cefazolin sodium had an inhibitory effect on the enzyme. Activity%-[I] graphs were drawn with the data obtained as a result of the kinetic studies, and the IC50 values for the antibiotics in question were calculated as 0.66, 2.07 and 2.09 mM, respectively.

**Key Words:** Glutathione S-transferase, Antibiotic, Inhibition