ABSTRACT

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Catechins belong to the flavonoids and they are the main polyphenolic compounds of green tea. Catechins are considered to be very beneficial for the human organism. They have positive effect on the cardiovascular system and reduction of blood sugar levels. Also they have anticancer, antibacterial, antiviral, and antioxidant effects and prevent tooth decay. Catechins, however, also may inhibit or induce important biotransformation enzymes and thus can affect both desirable and undesirable effects of many drugs.

In our study, *in vitro* effect of several of catechins (catechin, epicatechin, epigallocatechin, epicatechin-3-gallate and epigallocatechin gallate), and green tea extract Polyfenonu E on toxicity of drugs was tested. Doxorubicin and acetaminophen, and its toxic metabolite were chosen for our study. Experiments were conducted in intestinal tumor line HCT-8, and in the primary culture of isolated rat hepatocytes. For monitoring the effects of catechins, three different cell viability tests and measurements of reactive oxygen species (ROS) were used.

The results showed that catechins have no effect on the proliferation of intestinal line HCT-8, however, they increase the viability of isolated hepatocytes. Catechins don´t affect the antiproliferative effect of doxorubicin on intestinal tumor line HCT-8 or toxicity of doxorubicin into hepatocytes. The lower concentrations, catechins increase toxicity of acetaminophen for hepatocytes, but in higher concentrations, they decrease it. Epigallocatechin gallate and Polyfenon E possess good antioxidant properties and they reduce the formation of ROS induced by the tested drugs.