Current Topics in Biophysics (Zagadnienia Biofizyki Współczesnej) vol. 24 (2), 2000, 241-244

Inhibition by genistein-8-C-glycoside of some oxidative processes in liver microsomes and erythrocytes

Leu B.Zavodnik, Alina P.Shkodich, Vladimir A.Ovchinnikov, Vyacheslav U.Buko

The purpose of this investigation was to reveal biochemical and antioxidant activity of genistein-8-C-glycoside (G8CG) a flavonoid isolated from flowers of *Lupinus luteus.* Oxidative stress in human red blood cells (RBC) and liver microsomal membranes has been induced by *in vitro* treatment with *tert*-butyl hydroperoxide *(t*BHP*)* or hypochlorous acid. G8CG develops a clear-cut antioxidant effect in liver homogenates and microsomes, preventing the destruction of cytochrome P-450 and its conversion to an inactive form cytochrome P-420. The pretreatment of RBC with G8CG (30 minutes before *t*BHP addition; 1, 3 and 5 mM antioxidant) decreased the level of TBARS by 37, 44 and 49% respectively. G8CG in the concentration range of 0.5-2 mM effectively inhibited HOCl-induced haemolysis to the same extent as did well known HOCl scavengers, taurine and reduced glutathione, but was less effective in the protection of intracellular GSH.