

Propolis and its polyphenolic compounds given to mice before irradiation protect mice from the lethal effects of whole-body irradiation.

Orsolic N, Benkovic V and Horvat-Knezevic A, et. al. **Assessment by Survival Analysis of the Radioprotective Properties of Propolis and Its Polyphenolic Compounds.** Biol. Pharm. Bull 2007 May30(5): 946-951.

Propolis and single flavonoids (caffeic acid, chrysin and naringin) given to mice before irradiation protect mice from the lethal effects of whole-body irradiation and diminish primary DNA damage in their white blood cells as detected by the alkaline comet assay.

Benkovic V, Orsolic N and Horvat-Knezevic A, et. al. **Evaluation of the Radioprotective Effects of Propolis and Flavonoids in Gamma-Irradiated Mice: The Alkaline Comet Assay Study.** Biol. Pharm. Bull. 2008 Jan31(1): 167-172.

Pre-treatment with caffeic acid positively modulated all the gamma radiation-induced changes of lymphocytes in vitro.

Devipriya N, Sudheer AR and Menon VP. **Caffeic acid protects human peripheral blood lymphocytes against gamma radiation-induced cellular damage.** 2008 May/June22(3): 175-186.

Water-soluble derivative of propolis, caffeic acid, chrysin and naringin have radio protective abilities comparable to the radio protector AET without genotoxicity. Water-soluble derivative of propolis was found to be the most effective in diminishing the levels of primary and more complex cytogenetic DNA damage in white blood cells.

Benkovic V, Horvat-Knezevic A and Orsolic N, et. al. **Evaluation of radio protective effects of propolis and its flavonoid constituents: in vitro study on human white blood cells.** Phyto Research 2009 Aug23(8): 1159-1168.