

CP-002

THE WATER EXTRACT OF KOREAN GINSENG PROTECT RADIATION-INDUCED DNA DAMAGE IN MURINE LYMPHOCYTES

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ABSTRACT

A radiation-induced DNA double strand break (dsb) is associated with the loss of a base from each strand and the genetic codes need to be restored. A number of mechanisms may be involved in cell death following irradiation. Ginseng has been extensively used in the traditional oriental medicine as a restorative, tonic and prophylactic agent. Ginseng may be also useful for practical application in radiation protection and cancer therapy because of low toxicity and worldwide dispersion of this natural product. Therefore, we have examined the effects of ginseng on the induction and repair of γ -ray-induced DNA double strand breaks (dsb) using neutral filter elution technique at pH 9.6 in cultured murine spleen lymphocytes. Ginseng water extract 500 $\mu\text{g/ml}$ was added to the culture medium either for 48 hours before 100Gy γ -ray-irradiation. While repair was almost completed until 220.2 minutes after irradiation, DNA repair of irradiated cells in the presence of ginseng extract was did not return to the corresponding control levels even after 621.9 minutes. From these data, it could be calculated that ginseng reduced the relative strand scission factor (RSSF) by about 2. Therefore, it could be concluded that ginseng has radioprotective effect against γ -ray induced DNA dsb and repair in cultured mouse lymphocytes.

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