

[P-60]**The Protective Role of SeMet in Normal Cells Against Ionizing Radiation**

Hwa Jin Jung, Jee Na Hwang, Won Hye Ka, Yun Joo Cho, Ju Han Lee,
Jeong Won Hwang, Young Rok Seo

*Department of Pharmacology, Institute for Basic Medical Science (IBMS), College of
Medicine, Kyung Hee University, Dongdaemun-gu, Seoul 130-701, Korea*

The cancer chemopreventive properties of selenium have been studied over the past 20 years, mainly with rodent models of mammary carcinogenesis. Our previous study suggested that SeMet has been shown to modulate the redox (reduction/oxidation) status and the activity of tumor suppressor p53. We also found that the pre-treated SeMet provides the protective effect from the UV irradiation. Recently, the ionizing irradiation (IR), having capacity to ionize the medium such as x , γ and neutron, been reported to induce cancer by DNA and chromosome damage. In this study, we investigated whether SeMet also protects cells exposed to IR as well as to UV. Using comet assay, the DNA repair against IR was measured in SeMet pre-treated or non-treated normal fibroblast cells. The viability against IR-damage in response to SeMet was analysed by clonogenic assay. Our data showed that the decrease of IR-damaged sites in comet assay was observed in normal fibroblasts pre-treated with SeMet. In addition, the increase of cell survival was observed in the SeMet pre-treated cells, suggesting that the SeMet protected cells from the DNA damaging agent IR. These results implicate that the treatment of selenium compound might provide an important clue for the strategy of protecting normal cells in radiation therapy.

Keyword: Selenomethionine, ionizing radiation, protective effect