Study of Protective effects of *Sambucus ebulus* against gamma irradiation induced lung toxicity in C57 mice

Mohammad Karami¹, Sejad Sajad alnabi², Anahita Nosrati³, Atefeh Naimifar⁴

*Department of pharmacology and toxicology, School of pharmacy, Mazandaran university of medical sciences, Sari, Iran*

**Abstract:**

The aim of present study was to investigate potential antioxidant and lung protective activities of *Sambucus ebulus* (SE) induced by Gamma-radiation. Hydro alcoholic extract of SE (20, 50 and 100 mg/kg) was studied for its lung protective activity induced by gamma irradiation. Phenol and flavonoid contents of the extract were determined as gallic acid and quercetin equivalents from a calibration curve, respectively.

Male C57 mice weighing 25-30 g were used for all experiments. Mice were divided into 10 groups of five mice in each group. Only the first and second groups (as negative control) received 10ml/kg of intraperitoneal saline fluid. Groups 3 to 8 received only SE extract with intraperitoneal doses of 20mg/kg, 50mg/kg and 100mg/kg (Three groups were repeatedly injected for 15 days, chronic) and the other three groups received a single dose of gamma irradiation just 2 hours before irradiation. The ninth and tenth groups (as positive control) received also the gamma rays. Finally, whole-body was exposed to 6 Gy gamma radiation from the source to deliver the dose rate of 0.85 Gy/min. Consequently, sections of Lung tissue were examined for any histopathologic changes.

Doses of 50 and 100mg/kg caused significant histopathological changes (P<0.05). Lung protective effect of SE can occur due to the decreasing lipid peroxidation.

Therefore, the result of our study, demonstrate that Gamma irradiation is a suitable model to study the lung protective effect of SE extract.

**Keyword:** *Sambucus ebulus*, Gamma irradiation, Histopathology changes, Antioxidant, Lung Protective