Radio-modulation effects on human breast cancer cell line by marian plum seed extracts

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Abstract: Marian plum seed extract (MPSE) from Bouea macrophylla Griffith contains anti-oxidant compounds such as flavonoids, tannins, terpenoids and phenolics which have radio-modulator properties in cancer treatment. In this study, the radio-modulator effect of MPSE was investigated in human breast adenocarcinoma cell (MCF-7). Cells were treated with MPSE before ionizing radiation. MPSE decreased the viability of MCF-7 and normal mouse fibroblast (L929) cell line with IC₅₀ values of 26.81±1.01 and 86.87±4.14 µg/mL, respectively. The radio-modulator effect on breast cancer cells and normal cells was determined by clonogenic assay. Cell cycle distribution and apoptosis were measured by flow cytometry. Furthermore, DNA damages and repair were assessed by comet assay.

Keywords: Bouea macrophylla Griffith; Breast cancer; Radio-modulator; Cancer treatments; Phenolic compounds