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Effect of Radiation Dose in Chest X-ray on Cells Proliferation and Morphology in MDA-MB-231 Breast Cancer cells

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Background: Everyone knows that breast cancer is the most popular disease in women around the world. There are a lot of factors that can cause breast cancer. However, radiation is one of the factors. Thus, we decide to study and learn from the experiment about the radiation effect on cell proliferation and morphology.

Methods: To study, the amount of radiation affects to the number of MDA-MB-231 breast cancer cells that cultured in the laboratory. We designed by separating into 2 groups; radiation groups and non-radiation groups and in different techniques: 110 kVp 5 mAs, 110 kVp 8 mAs, 110 kVp 10 mAs. After that, we brought and measure the cell by the principle of Alamar Blue ® Assay. Moreover, we calculated the percentage of cell viability and counted the number of cells at different times of 1, 24, 48, 72, 96 hours. Finally, using the inverted microscope to observe how the cell was changed.

Results: From using MDA-MB-231 breast cancer cell to experiment with radiation. The results showed that the metabolism of the cell that exposed to radiation was decreased. Significantly, increasing radiation dose also affects to cell metabolism.

Conclusion: The radiation affects to the MDA-MB-231 breast cancer cell that changes the morphology, number of cell and cell proliferation.

Keywords: Cell viability, Radiation, Breast cancer, MDA-MB-231, Morphology

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