

# Immunocyte responses of mouse exposure by low dose $^{12}\text{C}^{6+}$ ion beam

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High LET radiations, such as heavy ion or neutron, have an increased biological effectiveness compared to low LET radiations for cell killing, cell cycle perturbations and genetic instability..

In this paper, we investigate the peripheral blood lymphocytes, thymus cell and spleen lymphocytes cycle effects of exposure with different dose of 73.74MeV/u  $^{12}\text{C}^{6+}$  ion on mouse. These BalB/C were irradiated with 39cGy, 55cGy and 1Gy of  $^{12}\text{C}^{6+}$  ion at 20cGy/min. The cell cycle and apoptosis were determined by flow cytometry, and the thymus and spleen index were measured by weight. When these mice were irradiated by  $^{12}\text{C}^{6+}$ , the cycle of immunocyte had some changes, and the percentage of apoptosis increased with doses increasing irradiation, especially blood lymphocyte. It might be suggested that irradiated by  $^{12}\text{C}^{6+}$  total-body can result in more damage for immune system than normal irradiation.