

Radiation therapy and hyperthermia(159-176)

- 159 Comparisons of radio- and thermo-sensitivities among three cell lines of oncogene-defined human cancers with two long term cultured cell lines.

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Oncogene-defined three human cancer cell lines of adenocarcinoma A-549 of lung, transitional epithelial carcinoma T-24 of bladder and squamous cell carcinoma Ca 9-22 of gingiva were adopted to determine radio- and thermo-sensitivities with reference to their defined oncogenes, in comparisons with these sensitivities of long term cultured cell lines of V-79 cells of moderate radio- and thermo-sensitivities originated from Chinese hamster lung and L cells of high radio- and thermo-sensitivities originated from murine fibroblasts. The investigation was extended to determine their cancer suppressor gene of P-53 with reference to length of cell cycle time.

- 160 Thermosensitivity and Thermotolerance of Scid Mouse Lung Fibroblast Cells.

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The scid mouse has a genetic mutation on chromosome 16 and an aberration of V(D)J recombination in its immunoglobulin and T cell receptor genes. Scid fibroblast cell line was established from lung tissue of scid mouse with SV40 virus transfection. This cell was highly sensitive to ionizing radiation. Scid cell containing a single human chromosome 8 was as radioresistant as Balb/c 3T3 cell. The thermosensitivity and thermotolerance of these cells were measured at 44°C. Scid cell was highly sensitive to heat compared with Balb/c 3T3 cells. Scid cell containing human chromosome 8 have become as sensitive as Balb/c 3T3 cell. However, thermotolerance was the same in these cells. These results suggest that a decision factor of thermosensitivity exists on human chromosome 8.