

improving the administration of Bleomycin. For analysis of cell kinetics, "cumulative labeling method" was used, that is, ^3H -thymidine was injected into a peritoneal cavity repeatedly, and for making radioautogram, tumor biopsy was performed at 1, 6 and 24 hours respectively after the first injection of ^3H -TdR.

Kinetic parameter of tumor cell are follows: DNA synthesis time (ts) ranged from 6 to 10 hours and generation time (tg), from 34 to 38 hours.

Taking the ts and tg into consideration, 0.08 mg of Bleomycin was injected subcutaneously 5 times at the interval of 5 (Group 1),

24 (Group 2), and 48 hours (Group 3) respectively and radioautography was taken after 48 hours of last injection of Bleomycin.

Results are as follows: Labeling Index of Group 1 and 2 show 16.7% and 26.6%, whereas that of control group was 32.8%. Prolongation of ts and tg of Group 1 was observed, but the Prolongation of Group 2 and 3 was not remarkable. The 5 hours interval administration of Bleomycin was the most effective about the depression of cell proliferation.

The effects of Bleomycin on the normal tissue cell were also discussed.

Kinetic Analysis of Calcium Metabolism in Human

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Calcium kinetics were studied in patients with various disorders of calcium metabolism by measuring the time course of radioactive Ca or Sr concentrations in blood, and whole body retention after a intravenous injection, and fitting the curves thus obtained to sums of exponential functions.

Various compartment models were then formulated, and their validities were examined by computing the transfer rates and pool sizes of the compartments. Two models were compatible to data in three compartment

models, and four models in four compartment analysis. There were, however, marked discrepancies between the calculated and observed whole body retention values, which was due to the isotope uptake in the fixed compartment of the bone.

The new way of computing this accretion rate was devised, and tested with all parameters obtainable from the area and shape of the blood radioactivity curves and whole body retention curves without assuming particular compartment models.

Some Observation on Estriol-4- ^{14}C Incorporation into Some Organs in Fetus

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Present experiments were performed to study how Estriol-4- ^{14}C was incorporated into each fraction of the organs.

Each fetus was given Estriol-4- ^{14}C by umbilical cord injection.

Some organs were homogenized and were