

group, the peak is reached 3 hours later, and thereafter it is gradually decreased or decreases biphasically.

In the biosynthesis of fatty acids in the

test group of our study, the biosynthesis seems to be accelerated, but it is not clear why the biosynthesis is accelerated by the irradiation.

Studies on Synthesis of Protein and Nucleic Acid in the Tumor Bearing Animals

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The alterations of protein and nucleic acid synthesis in the tumor bearing animals were studied using ^{14}C -glycine and ^{14}C -thymidine.

1) Incorporation of ^{14}C -glycine into Ehrlich solid tumor cell fractions. The solid tumor was made by inoculations of 500×10^4 Ehrlich ascitic tumor cells into the subcutaneous tissue of the mice. The uptake of radioactivity in the liver and solid tumor were examined on twelve days after injection of $5\mu\text{Ci}$ of ^{14}C -glycine. The liver and solid tumor were fractionated by Moule's method (1960).

The radioactivity of ^{14}C which was incorporated into the cell fractionations, were measured by gas flow counter.

The ^{14}C uptake of microsomal fraction-I and-II were significantly higher than that of nuclear and mitochondrial fractions of liver from the mice bearing Ehrlich solid tumor ($p < 0.01$) as well as the liver of normal mice. In spite of higher ^{14}C uptake of microsomal fractions of liver from tumor bearing mice,

lower ^{14}C uptakes in all fractions from Ehrlich tumor itself were observed. These uptakes were determined little changes in processing of time. The per cent uptakes of microsomal fraction-I and-II from the liver of normal mice were high, whereas that of nuclear fraction from Ehrlich solid tumor was higher than the other fractions.

2) Incorporation of ^{14}C -thymidine into Ehrlich ascitic tumor cell fractions. Two μCi of ^{14}C -thymidine were administered into a mouse tail vein. The ^{14}C uptake was observed in the cell fractions of liver and Ehrlich tumor cells at sixty minutes after administration of ^{14}C -thymidine.

The ^{14}C uptake of the nuclear fraction of Ehrlich ascitic tumor cells was absolutely high ($p < 0.0001$).

These facts indicated that DNA synthesis in Ehrlich ascitic tumor cells were very high and active.