

## X. Endocrine Organs

### Studies on Proliferation of Follicular Epithelium of the Thyroid Using $^3\text{H}$ -Thymidine Autoradiography Part One. On Proliferation of Follicular Epithelium of the Thyroid in Normal Rats

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$^3\text{H}$ -thymidine autoradiography was applied for normal rat to clarify the mode of cell proliferation of the thyroid.

At 30 minutes following the intraperitoneal injection of  $^3\text{H}$ -thymidine the labeled cells appeared not only on immature follicles but also on mature follicles. With the lapse of the after the injection, the percentgae of the labeled cells was increased on matured follicles and decreased on immature follicles. From these data it can be concluded that the generative cells may be located on the both of immature follicles and mature follicles, and imma-

ture follicles develop to mature follicles according to cell division.

Multilayers of follicular epithelium were rarely observed in normal thyroid gland. In these parts the labeled cells appeared mostly on the basis of multilayers, and rarely on the apex too. However the labeled cells on the apex tend to increase with the lapse of time. These data suggest that the generative cells may be located mostly on the basis of multilayer and rarely on the apex, and the labeled cells may move up to the apex after cell division.

### Studies on Proliferation of Follicular Epithelium of the Thyroid Using $^3\text{H}$ -Thymidine Autoradiography Part Two. On Proliferation of Follicular Epithelium in Thyroid Disease

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$^3\text{H}$ -thymidine autoradiography was applied for various thyroid diseases using in vitro and in vivo flash labeling methods.

There are no differences between the labeling indexes in vitro and in vivo.

It is normal thyroid gland, hyperthyroidism and thyroiditis. Therefore, the labeling indexes were calculated from the both cell compartments.

The indexes calculated from the above conditions are almost identical among normal,

hyperthyroid, and thyroiditis. This result indicate that cell division is not rised in hyperthyroid gland.

Comparing the labeling indexes of adenoma and cancer, the values of the latter are higher than that of the former. However, it is also true that the index of thyroid cancer is yet low comparing with other cancers. This result may correspond to the slow growth of thyroid cancer.