

### 158. Cell Population Kinetics of Established Human Uterine Cervical Carcinoma in Nude Mice

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About five established human uterine cervical carcinoma (squamous cell carcinoma) in nude mice, histologically, 2 cases of small-cell non keratinizing, 2 cases of large-cell non keratinizing, and a case of keratinizing, the cell population kinetics were examined by a flow-microfluorometry with computed analysis and autoradiography after pulse labeling with  $^3\text{H}$ -TdR. Additionally data were used in order to investigate the behavior of non-proliferative cell compartment.

As the result, in the keratinizing case labeling index, proportions of cells in S-phase, and growth fraction were less than that in the small-cell non keratinizing cases. Proportions of non-proliferative cell compartment in G1-phase were about 50-70% of G1-cells in all cases, however, that in G2-phase in the keratinizing case were higher than the other.

Therefore, it was suggested that the kinetic behavior of these strains depend on histological classifications to some extent in this study, although cell kinetics of another cases should be also examined by the same experiment.

### 159. A Study on Elucidation of the Mechanism of Metastasis of Uterine Carcinoma—Significance of Cellular Infiltration and Fibrous Alteration on the Stroma Surrounding Uterine Carcinoma—

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Integrated examination of the alteration of stroma surrounding uterine tumor is important to find out the basic characteristics of the tumorous infiltration or the performance of protective mechanism of host. From such viewpoint, the author et al. conducted first

of all the histological and histochemical examination of cellular infiltration, fibrous distribution and substrate in the stroma around the foci and secondly measured hydroxyproline, a specific metabolite of collagen, and collagenase, its specific decomposing enzyme. The results obtained were comparatively studied according to clinical staging, histological type and CPL classification. Acid mucopolysaccharides in the stroma around foci was found more often in C type and mature type similar results were obtained also as to fibrous distribution and collagen amount. In the observation of infiltrated cells, the rate of plasma cell was higher in I stage group, C type and mature type. Collagenase activity was higher in L type and moderate type. From these findings, it is considered that increase of acid mucopolysaccharides, fibrous distribution and collagen, and reduction of the activity of collagenase and infiltration of plasma cell mean the manifestation of protective mechanism of host against infiltration of carcinoma.

### 160. A New Theory Concerning Abnormal Cells in Dysplasia and CIS—Based on their Nuclear DNA Content as Seen on the Histogram

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The use of flow cytometry has become widespread in Japan during the last five years. Unlike MSP and other past systems, the present systems are able to measure large numbers of cells in a very short period of time. With flow cytometry we aim to measure nuclear DNA, RNA and protein content as well as the number of cells. At our clinic we use a ICP-11 system. We are continuing our studies of borderline lesions, in particular cancer of the uterine cervix.

The object of our present study was to try to define the relationship between the cell morphology and diploid cells on the histogram in cases of dysplasia and CIS.

In cases of dysplasia and CIS, we used an electro-kelatotome to obtain just cells from the lesion from a surgically removed uterine specimen. These cells were stained with fluorescent etidium bromide for DNA analysis. We found that in lesions in dysplasia and CIS, the population of diploid cells was larger than that of any other cell type. We also found that the morphology and in particular nuclear shape of the diploid cells resembled that of normal cells.