

## Differentiation-associated Modifications of Ultrastructures in Human Cervical Carcinoma SIHA Cells

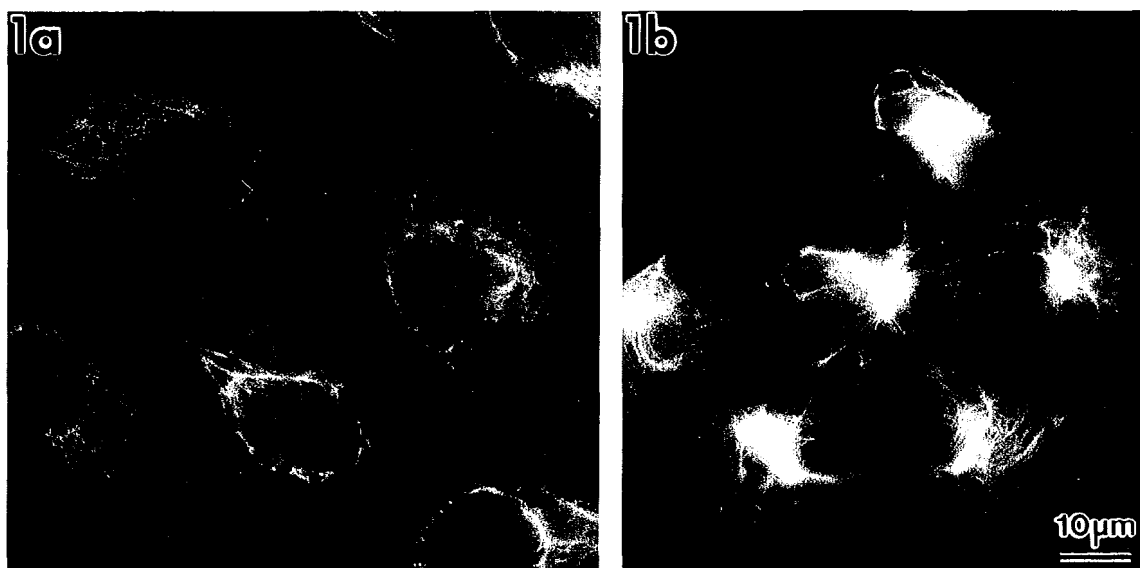
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Differentiation is one of the most important cell processes and has been extensively studied for decades. However, modifications of ultrastructures during the differentiation are not well defined. This communication reported differentiation-associated modification of ultrastructures in human cervical carcinoma SIHA cells treated with a variety of differentiation promoting reagents. Cell cycle analysis and cell survival (MTT) assay showed that differentiation status of SIHA cells was modified by these reagents. Since keratins are epithelium-specific markers, and expression of keratins are closely related to differentiation status of epithelial cells and carcinoma derived from epithelial cells. Keratin filaments of SIHA cells were investigated by immunofluorescent staining with AE1/AE3

monoclonal antibodies. In control cells (Fig. 1a), keratin filaments were evenly distributed in the cytoplasm. Aggregation of keratin filaments were found in the cells treated with retinoic acid (Fig. 1b). In the cells treated with arabinosyl cytosine (ara-C), cell size were increased, and distribution of keratin filaments were more extensive. Cell sizes and distributions of keratin filaments were not apparently altered in the cells treated with phorbol diester (TPA). Electron microscopic observation, however, revealed autophagosomes containing mitochondria (Fig. 2). These results indicate that keratin filaments and mitochondria are modified during differentiation of SIHA cells. However, their roles in cell differentiation needs to be determined.



**Fig. 1.** Immunofluorescent staining showed that keratin filaments were evenly distributed in cytoplasm of control cells (a). In cells treated with retinoic acid (b), keratin filaments aggregated in center of the cell.



**Fig. 2.** In SIHA cells treated with TPA, autophagosomes containing mitochondria (arrow) were found. Morphology of mitochondria (M), golgi apparatus (G) and nucleus were apparently normal.