

Relations between Cyclin D1 and Chromosome 11 in Thyroid Carcinoma: Analysis by Dual Stain Using FISH and Immunostaining Method

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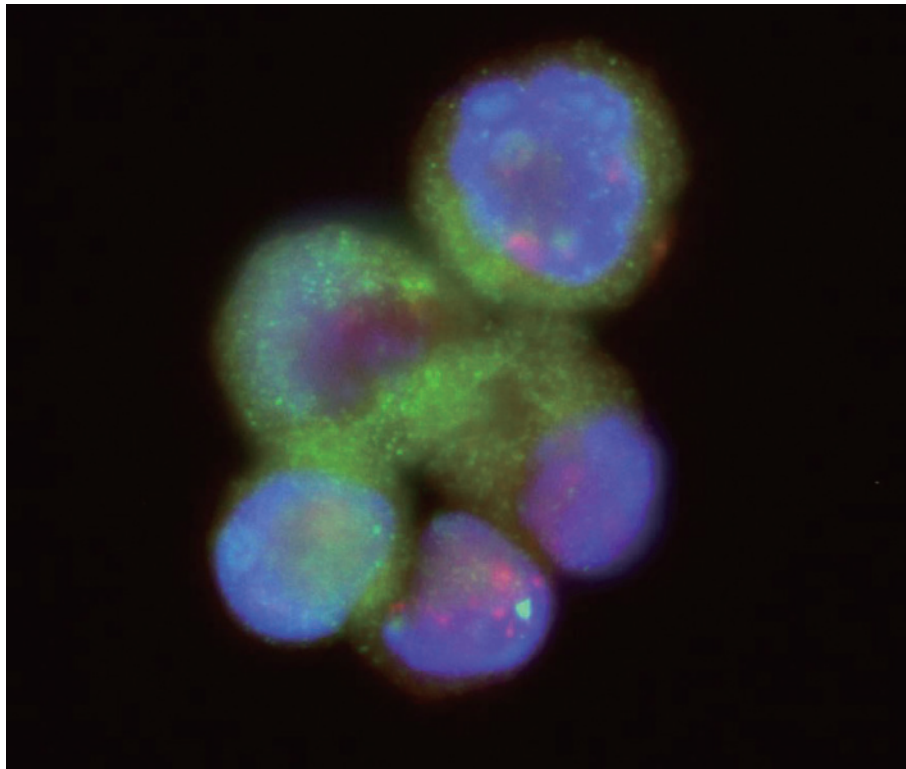


Fig. 1

Abstract

Cyclin D1 is an important cell-cycle regulator that drives the cell cycle from the G1 phase to the S phase. Elevated nuclear cyclin D1 expression has been found in human tumors, including thyroid carcinoma. Protein production is known to require DNA amplification in each cell, but reports of such amplification have not been published. This study aimed to analyze the relation between cyclin D1 protein production and chromosome 11 in cultured cells by means of dual staining with fluorescence in situ hybridization (FISH) and immunostaining (**Fig. 1**). In addition, we immunostained anaplastic thyroid carcinoma tissue (**Fig. 2**). The results indicate that cyclin D1 is not related to chromosome 11 in cultured cells. Furthermore, tissue study showed that cyclin D1 is produced in the cytoplasm and in nuclei in various ratios.

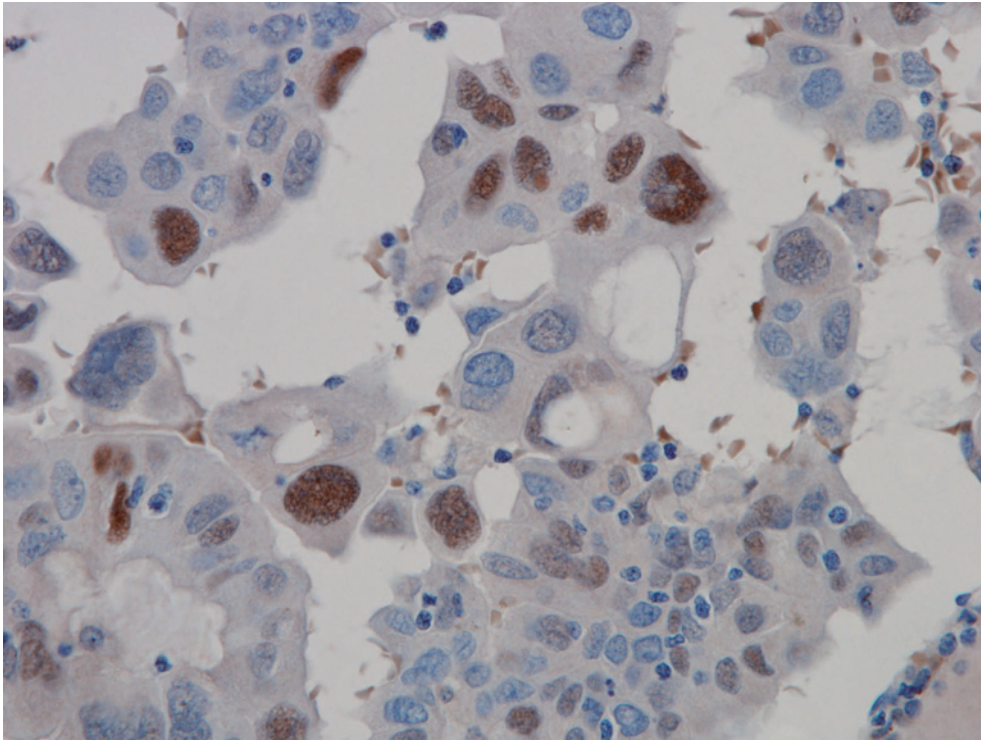


Fig. 2

- Fig. 1** Dual staining of the thyroid anaplastic carcinoma cell line 8305C with FISH and immunostaining. Cyclin D1 (green) and chromosome 11 (red) in each cultured cell shown with dual staining (FISH and immunostaining).
- Fig. 2** Immunohistochemistry of thyroid anaplastic carcinoma tissue. In this case, overexpression of cyclin D1 is shown in the nuclei of carcinoma cells.