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DDR2 overexpression in oral squamous cell carcinoma is associated to lymph node metastasis

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Background: Oral cancer is the fourth highest incidence of malignancy in males and the seventh highest in the general population of Taiwan. Oral squamous cell carcinoma (OSCC) is the main subtype of oral cancer, which accounts for >95% of all cases of oral cancer. Discoidin domain receptors (DDRs), a collagen receptor tyrosine kinase, play a major role in cancer progression. DDR2 has been suggested as a prognostic marker in several cancer types; however, the correlation between DDR2 expression and clinical outcome of oral cancer patients in Taiwan population has not been investigated.

Material & Methods: In the present study we sought to determine the clinical significance of discoidin domain receptor tyrosine kinase 2 (DDR2) expression in OSCC patients. We examined DDR2 expression in OSCC specimens by immunohistochemistry and then we analyzed the association of DDR2 expression with clinicopathological factors in OSCC.

Result: We divided 254 OSCC cases into two groups based on DDR2 expression levels and compared with several clinicopathological factors and their overall survival. The group with high DDR2 expression had significantly higher frequencies of lymph node metastasis (P=0.0094) and AJCC stage (P=0.0058) compared to the group with low DDR2 expression. Furthermore, the lymph node metastasis oral cancer patients with high DDR2 expression had low survival rate than low DDR2 group (P=0.0458).

Conclusions: Our data indicate that DDR2 is a potent biomarker that can be used as an effective therapeutic target for treating OSCC patients with lymph node metastasis.
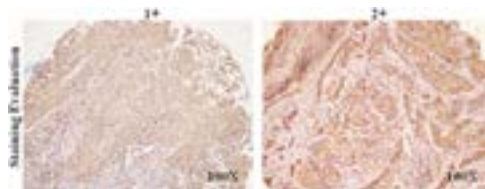
Figure 1: Expression levels of DDR2 proteins in OSCC clinical specimens. Evaluation for IHC staining of DDR2 expression. Shown is a representative example of each grade.
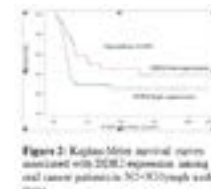
Recent Publications

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Biography

Shu Hui Lin has her expertise in gene mutation test, cancer diagnosis and cancer research. She is a Leader of Molecular Pathology Department of Changhua Christian Hospital in Taiwan. She has PhD of Institute of Medicine. She is committed to cytological diagnosis and establishment technical of gene mutations test. Her research field focuses on oral squamous cell carcinoma and she hopes that she can find novel therapeutic targets in oral cancer.

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