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## Cancer-associated fibroblast induced chemokine (C-C motif) ligand 11 contribute to the progression of head and neck cancer

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Head and neck squamous cell carcinoma (HNSCC) is one of the leading causes of cancer-related death in Taiwan and worldwide. The prognosis of HNSCC is usually poor because of its propensity of extensive invasion, local recurrence and frequent regional lymph node metastasis, even at initial diagnosis. Recent studies showed carcinoma-associated fibroblasts (CAFs), a major type of tumor-surrounding stromal cell, generate certain mediators through which CAFs interact with tumors and contribute to cancer progression in numerous cancers. In the present study, we used organotypic culture to investigate CAFs that promote aggressive behavior of cancer cells. Using microarray analysis, we detected abundant expression of chemokine (C-C motif) ligand 11 (CCL11) in CAFs and identify CCL11 as a critical mediator in CAFs-induced invasiveness. We validated that CCL11 played a major role in the crosstalk between fibroblasts and HNSCC cells via the paracrine manner. CCL11 was found upregulated in CAFs than in normal fibroblasts via Western blot analysis. HNSCC cells treated with recombinant CCL11 increased capabilities of sphere formation, promoted migration and invasion abilities through induction of the epithelial-to-mesenchymal transdifferentiation with corresponding morphological alterations of cancer cells. Counteracting CCL11 activity diminished the aggressive phenotype of cancer cells induced by CAFs. We further studied the relationship between the expression of CCL11 in both CAFs and HNSCC cells and clinical outcome in the patients with HNSCC. These results indicate that CAFs promote cancer invasiveness via a paracrine effect on microenvironmental CCL11 signaling and suggest that CCL11 is a potential prognostic biomarker that could be considered in therapeutic strategies for the treatment of patients with HNSCC.

### Biography

Yu-Chun Lin has completed his MD at the age of 25 years from National Defense Medical Center, Taipei, Taiwan. He received anatomic pathology training at Tri-service General Hospital from 2007-2010 and served as anatomic pathology physician at Pathology department of Tri-service General Hospital since 2012.

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