

# 10<sup>th</sup> Global Annual Oncologists Meeting

July 11-13, 2016 Cologne, Germany

## The expression of Fas ligand on tumor affects the spatial distribution and activation of fibroblasts

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Fibroblasts are a subpopulation of cells infiltrating in tumor stroma and may promote tumor growth and metastasis. Benign tumor nodules are frequently encircled by fibroblast-like cells. The expression of FasL, a type II transmembrane protein of the tumor necrosis factor family and widely expressed in various cancers, correlates with tumor malignancy. Knocking down FasL of human glioma by FasL ribozymes affects the stroma constitution of tumor nodule generated in Nude mice. To show the effect of FasL on the interplay between tumor and fibroblasts, we evaluated the spatial interaction of cells by 2-dimensional (2-D) and 3-dimensional (3-D) co-culture systems. In 2-D co-culture, a capsule-like pattern of fibroblasts encircling tumor cells appeared more frequently for FasL<sup>low</sup> tumor cells than FasL<sup>high</sup> tumor cells. Encapsulation of FasL<sup>low</sup> tumor cells by fibroblast may represent an unidentified anti-tumor action of fibroblasts at early phase of tumor development. In 3-D co-culture system, FasL<sup>high</sup> tumor cells tended to appear at the surface of spheroid indicating that they have capability to migrate through fibroblast cell aggregates. Accordingly, the number of tumor cells on spheroid was reduced when their FasL was suppressed by FasL ribozyme. Conditioned media of FasL<sup>high</sup>-tumor cells significantly stimulated fibroblast to produce TGF- $\beta$  and PDGFA and express the activation markers, SMA and FAP. Taken together, our results reveal a novel role of FasL in determining the architecture of tumor tissue which has been used as a marker to define the tumor malignancy.

### Biography

Bei-Chang Yang has completed his PhD at Tübingen University, Germany, 1989. He is now a full professor at National Cheng Kung University, Tainan, Taiwan. In addition to medical research, he also actively carries out research projects on medical history and education. Currently, he also serves as the president of the Association of Science, Technology and Society, Taiwan.

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