中文題目：CS12-胃癌細胞株中JNK1/2-b-catenin調控細胞增生情形.

英文題目：Cross-talk of jnk1/2 and b-catenin pathways is essential for HOXA9 to induce human CS12 gastric cancer cell proliferation

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Background: We have generated and characterized a novel human gastric cell line, KMU-CS12 (CS12), from an immortal cell line KMU-CSN (CSN) that was derived from putative human gastric stem cell/progenitor cell clone, KMU-GI2. The CS12 gastric cell line showed cancer cell phenotypes such as the high ability of anchorage-independent growth and the tumor development in immune deficient mice. We also found that the homeobox gene 9 (HOXA9) was highly expressed in CS12 gastric cancer cells because of the duplication of the short arm of Chromosome 7 on Chromosome 12.

Aims: In this study, we further identify the role of HOXA9 gene in the gastric tumor development.

Methods: We applied the HOXA9 small interfering RNA (siRNA) to successfully knock down the expression of HOXA9 gene, transfected cells with pCMV-AC-HOXA9-tGFP to overexpress HOXA9, and subsequently explore the role of HOXA9 in CS12 gastric cancer cells. We measured the cell proliferation by BrdU proliferation assay and cell survival by MTT assay; and observed the expression of proliferation marker PCNA; cell cycle-related factors such as cyclin A, cyclin D1, cyclin E, p53; and phosphorylation of JNK1/2 and B-catenin by Western Blot.

Results: Silence of HOXA9 gene significantly inhibited cell proliferation by BrdU proliferation assay, and reduced cell viability by MTT assay in CS12 gastric cancer cells. In the regulation of cell cycle, down-regulation of HOXA9 gene significantly influenced the protein expression of proliferation marker PCNA and cell cycle-related factors cyclin A and cyclin D1. Furthermore, we found that the both JNK1/2 and beta-catenin pathways might be involved in HOXA9-mediated CS12 gastric cancer cell proliferation.

Conclusions: This study showed that cross-talk between JNK1/2 and Wnt/ -catenin pathways might be involved in HOXA9-mediated CS12 gastric cancer cell proliferation. Collectively, the results suggested that HOXA9 may play a critical role in regulating cell proliferation in CS12 gastric cancer cells by activating JNK1/2 and Wnt/β-catenin pathways.