中文題目:大腸腫瘤癌化進程與 SKA3,DSN1 以及 AURKA 的過度表現相關

英文題目: Over-expression of SKA3, DSN1and AURKA contributes to colorectal adenoma to carcinoma progression

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Background: The identification of genes for malignant transformation in colorectal adenomas (CRAs) has been based primarily on cross-sectional observations. Development of colorectal cancer (CRC) involves transformation of normal mucosal tissues into benign adenomas and then adenomas into malignant tumors. To explore the genes that are involved the malignant transformation in CRAs.

Method and Material: We identified relevant genes using autologous samples.(referred as tri-part samples) by performing genome-wide SNP genotyping and RNA sequencing analysis of adenocarcinomas, adenomatous polyps, and non-neoplastic colon tissues from individual patients, we identified 68 genes with dysregulated expression.and mdifferential copy number alterations.

Result: SKA3,DSN1, and Aurora A protein levels were up-regulated with overexpression was associated with chromosome instability (CIN). Depletion of SKA3 or DSN1 induced G2/M arrest and decreased migration, invasion, and anchorage-independent growth. Knockdown of SKA3 in CRC cells reduced cell growth rates and increased apoptosis.SKA3 at chromosome 13q was involved in promoting malignant transformation.Moreover, AURKA and DSN1 are thus critical for chromosome 20q amplification-associated malignant transformation in CRA. In order to helping to improve treatment, evaluating the expression of these genes may help identify patients with progressive adenomas.

Conclusion: This report provides evidence that overexpression of the SKA3,DSN1, and Aurora A genes strongly correlates with the progression of CRA to CRC. Overexpression of these genes may lead to higher CIN in tumors with malignant transformation. Further investigation is required to identify the mechanism by which these kinetochore genes and their partner genes are initially up-regulated and how their overexpression leads to CIN in the specific chromosomes involved. Therefore, patients who have polyps with high levels of SKA3,DSN1, and Aurora A may require more thorough monitoring after polyp removal.