



Loss of *STAG2* causes aneuploidy in normal human bladder cells

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ABSTRACT. The aim of this study was to determine how the function of human stromal antigen 2 (STAG2) plays an important role in proper chromosome separation. STAG2 mRNA in normal bladder cells and bladder tumor cells was evaluated by RT-PCR. The protein levels of STAG2 in normal bladder cells and bladder tumor cells were determined

by western blot. A cell proliferation assay was used to measure the growth of tumor cells and STAG2-inhibited normal cells, and STAG2-inhibited normal cells were subjected to karyotype analysis. Both STAG-2 mRNA and protein expression levels were lower in bladder cancer cells compared to the controls. Knockdown of STAG2 caused aneuploidy in normal bladder cells, leading to a decreased expression of the cohesin complex components SMC1, SMC3 and RAD21, but there was no obvious effect of STAG2 knockdown on cell proliferation. Our study indicated that abnormal expression of STAG2 could cause aneuploidy in normal bladder cells.

Key words: Urologic neoplasms; Stromal antigen 2; Aneuploidy; Bladder cancer; Cohesin complex