Involvement of a cell adhesion molecule CADM1/TSLC1 in oncogenesis

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The aberration of cell adhesion is a critical step in the invasion and metastasis of human cancer. A tumor suppressor gene, *CADM1*/*TSLC1*, was originally identified in non-small cell lung cancer (NSCLC) by functional complementation. *CADM1* encodes an immunoglobulin superfamily cell adhesion molecule homologous to nectins and is expressed in the brain, testis, lung and many other epithelial tissues. In contrast, CADM1 is inactivated in 30-60% of various cancers in advanced stages, including NSCLC. CADM1 is primarily involved in the formation of an epithelial cell structure and associates with an actin-binding protein, 4.1B, and the membrane associated guanylate kinase homologs, providing a novel tumor suppressor cascade. Lung tumor development in the *Cadm1* gene deficient mice indicates that this cascade is essential for lung tumor suppression. On the other hand, CADM1 is ectopically expressed in adult T-cell leukemia (ATL) cells and may promote tumor invasion. The distinct roles of CADM1 in the oncogenesis of carcinoma and ATL would be due to tissue-specific differences in the down-stream cascades. Unique features of CADM1-mediated cell adhesion in oncogenesis will be discussed.

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