MUC13 EXPRESSION AND ITS IN VITRO FUNCTIONS IN OVARIAN CANCER

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ABSTRACT

Mucins are attractive targets for cancer diagnosis. MUC13 is a recently identified mucin and is suggested to be over-expressed in ovarian cancer. We analyzed the expression profile and function of MUC13 to determine its role in ovarian cancer. A monoclonal antibody (clone PPZ0020) was used to determine the expression profile of MUC13 by immunohistochemistry, using an ovarian tissue microarray slide containing normal and cancerous samples. Additionally, MUC13 expression was also analyzed in 55 clinically proven ovarian tissue cancer samples. For functional analysis, a full-length MUC13 was exogenously expressed in a MUC13 null ovarian cancer cell line SKOV-3 and evaluated by means of cell proliferation and migration assays. Paired student t-tests were performed for statistical analysis. MUC13 expression was undetectable in normal and benign ovarian samples and was significantly (p<0.005) higher in cancer samples. MUC13 expression was most frequent in mucinous types of ovarian cancer samples. Additionally, in functional studies the exogenous expression of MUC13 in SKOV-3 ovarian cancer cells increased cellular migration, cell proliferation, and the number of cells in S-phase of cell cycle. Furthermore, MUC13 expression reduced cell to cell aggregation. These results indicate that MUC13 is aberrantly expressed in ovarian cancer and may have a role in ovarian cancer pathogenesis.