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"Determination of the expression levels of fucosyltransferases in tumor tissue of patients with ovarian epithelial cancer and in the SKOV-3 cell line exposed to ascitic fluid"

Epithelial ovarian cancer (EOC) is the neoplasm of the female reproductive system deadliest worldwide. In advanced stages of the disease, the accumulation of ascites fluid (AF) is generated in the peritoneal cavity, containing components as growth factors and tumor cells that could be altering the microenvironment and could causes neo-expression or activation of various enzymes regulating post-translational modifications such as fucosylation. Tumor progression is associated with alterations fucosylated proteins on cell surface. This work is focused on determining the expression levels of fucosyltransferases, enzymes responsible for adding the residues of fucose to proteins, in tumor tissue of patients with EOC and in cell line SKOV-3 treated with AF. The strategy consisted in the analysis of 20 tumor sections of EOC by confocal microscopy, WB assays for Fut 2, 4 and 8 and RT-PCR assays for Fut 1-11. The analysis of the expression of the Fut 2, 4 and 8 in tumor sections detected a diffuse and heterogeneous distribution in each EOC histotype as well as a differential expression of Fut 2 and 4 by comparing healthy tissue with tumor tissue. The results of PCR and the WB show that there are differences in the patterns protein and mRNA of cells exposed to AF compared with control cells. We noticed that these differences are modified in function to the time of exposure to AF. Our results suggest that the ascitic fluid generates a microenvironment able to induce morphological and biochemical changes in SKOV-3 cells, such as differential expression of fucosyltransferases which could help the progression of EOC.

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