Effect of WNT7B in macrophage-stimulated mesothelial cells on ovarian cancer cell adhesion

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Ovarian cancer is a remarkably metastatic disease that is often characterized by widespread peritoneal dissemination. Recently, several studies have suggested that tumor microenvironment plays a significant role in ovarian cancer metastasis. However, the interaction between macrophages and mesothelial cells for ovarian cancer metastasis is unclear. We first investigated the effect of macrophages on gene expression pattern in mesothelial cells. Following treatment of mesothelial cells with conditioned medium (CM) of macrophages, we conducted a comparative analysis of global expression changes in mesothelial cells using mRNA sequencing. When compared to that in unstimulated-macrophages, 945 genes were up-regulated and 777 genes were down-regulated more than 2-fold in macrophage-stimulated mesothelial cells (MSM). Among the total 1722 genes, 94 genes including WNT7B were known to be associated with the regulation of cell adhesion. Interestingly, knockdown of WNT7B using siRNA attenuated the adhesion of ovarian cancer cells to mesothelial cells. These results indicate that the enhanced levels of WNT7B in MSM may play a role in the peritoneal dissemination of ovarian cancer.

Biography
Seung-Kye Cho is pursuing his Master's degree in Life and Nano-pharmaceutical Sciences at Kyung Hee University. He graduated in Oriental Pharmaceutical Science from the Kyung Hee University. He has interests in providing evidence supporting the importance of the interplay between ovarian cancer cells and mesothelial cells, and discovering novel factors of peritoneal dissemination of ovarian cancer.

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