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Inhibition of ovarian cancer stemness by silencing tumor-specific gene expression

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Peritoneal dissemination and metastasis of human ovarian cancer contributes to its high mortality rates for patients with ovarian cancer. Tumor-initiating cells (TICs) or cancer stem cells (CSCs) are potential sources of tumor progression, recurrence, and chemoresistance in ovarian cancer due to its unlimited self-renewal and proliferation property. Thus, targeting TICs or CSCs could improve the prognosis of ovarian cancer and the cure for ovarian cancer. To identify a potential diagnostic and prognostic biomarkers and therapeutic targets for intractable ovarian cancer, we pursued a further study with a gene encoding a membrane glycoprotein mC1 which is dramatically elevated in serous ovarian carcinomas compared with their normal counterparts. Interestingly, silencing of mC1 in human ovarian cancer cells led to the marked inhibition of cancer cell stemness. Importantly, high tumor-specific expression of mC1 in advanced ovarian cancer is associated with poor patient survival and thus mC1 is an independent prognostic biomarker ($p < 0.001$) in ovarian cancer. Taken together, our data suggest that mC1 might be a potential novel target for the treatment of intractable ovarian cancer without damaging the normal cells. This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2014R1A1A2053938).

Biography

Kyoungsook Park has completed her PhD from the University of Pennsylvania (UPENN) and postdoctoral studies from UPENN, Philadelphia, USA. She is a member of AACR and research professor at Sungkyunkwan University in Seoul, Republic of Korea. She has published more than 30 papers in reputed journals and has been serving as an active member of KSBMB and KSCMB.

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