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**Inhibitory effect on epithelial-mesenchymal transition (EMT) by HDAC9 inhibitor in CD133+ prostate cancer cell line**

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One of the theories that a small fraction of cancer cells, defined as cancer stem cells (CSCs), are given rise to differentiated tumor cells, is proposed to predict tumor recurrence and metastases, providing some support for the concept that CSCs may be metastatic precursors through epithelial and mesenchymal transition (EMT). In this study, we tried to examine that ectopic overexpression of CD133 as a key molecule maintaining the stability of CSCs in human prostate cancer cell line, PC-3, DU145 and LnCaP. In addition, whether the specific inhibitor of simultaneously expressed gene in metastatic category could lead to alleviate the EMT properties was investigated in CD133 overexpressed PC-3, DU145 and LnCaP. Ectopic over-expressions of CD133 in PC-3, DU145 led to increase the CSC-related protein expression and colony forming ability in compared with blank GFP transfected cells. In analysis by microarray, gene expression of HDAC9 was increased simultaneously in CD133 overexpressed PC-3, DU145 and LnCaP. In addition, inhibition of HDAC9 led the decrease of EMT and metastatic properties sustained with increase of E-cadherin expression, wound gap distance and cell invasion through inhibition of  $\beta$ -catenin translocation. Taken together, these findings suggest that inhibition of HDAC9 could play a functional role in regulating EMT properties in CSC-like prostate cancer and it could be facilitate study of a novel classification system and therapeutic strategies for metastasis of prostate cancer.

**Biography**

Bora Kim has graduated from Department of Bioengineering for BS course and Biomedical Engineering for MS course from Chonnam National University, South Korea and PhD candidate at the same department. Also, as Researcher, with the specialties including Bone Biology, and Carcinogenesis, she has been working at the Department of Orthopedic Surgery, and Laboratory of Orthopedic Research, Chosun University Hospital in South Korea.

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