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## OVARIAN CANCER STEM CELLS SERVE AS A NEW PROPHYLACTIC VACCINE FOR OVARIAN CANCER

Jun Dou, Di Wu, Xiaoyu Yu, Jing Wang, Yuxia Zhang, Yunlang Cai, Mulan Ren, Mei Guo, and Fengshu Zhao

Southeast University, China

**T**umor vaccines offer a number of advantages for cancer treatment. In the study, the vaccination of cancer stem cells (CSCs) with high expression of the type I receptor tyrosine kinase-like orphan receptor (ROR1) was evaluated in a murine model for the vaccine's immunogenicity and protective efficacy against epithelial ovarian carcinoma (EOC). CD117<sup>+</sup>CD44<sup>+</sup> CSCs were isolated from human EOC HO8910 cell line using a magnetic-activated cell sorting system; murine ID8 EOC suspension sphere cells, which are collectively known as cancer stem-like cells, were acquired from serum-free suspension sphere-forming culture. Mice were subcutaneously immunized with the repeat cycles of freezing and thawing whole HO8910 CD117<sup>+</sup>CD44<sup>+</sup>CSC and ID8 cancer stem-like cells, respectively, followed by a challenge with EOC cells at one week after final vaccination. The efficacy of CSC vaccine was observed in that the CSC vaccination induced significantly immunity against EOC growth, and markedly prolonged survival of EOC bearing mice in the prophylactic setting compared with non-CSC vaccination. Flow cytometry showed significantly increased immunocyte cytotoxicities and remarkably reduced CSC counts in the CSC vaccinated mice. Moreover, the protective efficacy against EOC was decreased when the ROR1 expression was down-regulated by shRNA in CSC vaccines. The findings from the study suggested that CSC vaccines with high ROR1 expression were highly effective in triggering immunity against EOC in vaccinated mice and may serve as an effective vaccine for EOC immunoprophylaxis.

### Biography

Jun Dou now is a Director, Professor of Department of Pathogenic Biology and Immunology, School of Medicine, Southeast University. He got his Medicine Doctor degree (MD, PhD) in 1997 at Zhejiang University of China. He visited the Ulm University School of Medicine, Germany as a Visiting Scholar from Jun' 1999 to Sep' 1999, and then visited the CDC, USA as a Senior Visiting Fellow from Oct' 2001 to Feb'2004. He also visited the Georgia State University, USA as a Visiting Fellow from Sep' 2006 to Dec'2006. Recently, he twice visited the Yale University School of Medicine, USA as a Senior Visiting Fellow in 2014 and in 2015. Currently his research has focused on targeted toward cancer stem cells (CSCs) by manipulating nc-RNAs for treating breast, ovarian, colon cancers and melanoma. He also continues research in CSC vaccines and CSC nanotheranostics in treating cancers.

njdoujun@seu.edu.cn