

## Bifidobacterium Infantis on Lewis lung cancer in mice

Hong Zhu<sup>1</sup>, Zhaojun Li<sup>1</sup>, Shuhua Mao<sup>2</sup>, Buyun Ma<sup>1</sup>, Shengtao Zhou<sup>1</sup>, Licong Deng<sup>1</sup>, Taiguo Liu<sup>1</sup>, Dandan Cui<sup>1</sup>, Yaqin Zhao<sup>1</sup>, Jianping He<sup>1</sup>, Cheng Yi<sup>1</sup> and Ying Huang<sup>1</sup>

<sup>1</sup>West China Hospital, Sichuan University, China

<sup>2</sup>Department of Oncology, Center Hospital, China

Soluble fms-like tyrosine kinase receptor (sFlt-1) is soluble form of extramembrane part of VEGFR-1 that has antitumor effects. Bifidobacterium Infantis is a kind of nonpathogenic and anaerobic bacteria which may have specific targeting property of hypoxic environment inside of solid tumors. The aim of the present study was to construct Bifidobacterium Infantis-mediated sFlt-1 gene transferring system and investigate its anti-tumor effect on Lewis lung cancer (LLC) in mice. Our results demonstrated that the Bifidobacterium Infantis-mediated sFlt-1 gene transferring system was constructed successfully and the system could express sFlt-1 at the levels of gene and protein. This system could not only significantly inhibit growth of HUVECs induced by VEGF in vitro, but also inhibit the tumor growth and prolong survival time of LLC C57BL/6 mice safely. These data suggest that Bifidobacterium Infantis-mediated sFlt-1 gene transferring system presents a promising therapeutic approach for the treatment of cancer.