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## Phenethyl isothiocyanate inhibits colorectal cancer stem cells by suppressing Wnt/ $\beta$ -catenin pathway

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Cancer stem cells (CSCs) play a crucial role in the process of cancer development. Targeting CSCs may be an effective way for adjuvant therapy to prevent the progression of cancer and prolong life. Phenethyl isothiocyanate (PEITC), the major active component from cruciferous vegetables, exhibits inspiring interventional effects in various human cancers. However, the effects of PEITC on colorectal CSCs and the underlying mechanisms remain unclear. The present study examined the inhibitory effects of PEITC on CSC-like properties in colorectal cancer spheroids. We revealed that PEITC inhibited the spheroid formation capacity of colorectal cancer cells as well as the expression of colorectal CSCs markers, along with suppression of cell proliferation and induction of apoptosis. Moreover, we illustrated that PEITC down-regulated the activation of Wnt/ $\beta$ -catenin pathway, whereas up-regulation of Wnt/ $\beta$ -catenin diminished the inhibitory effects of PEITC on colorectal CSCs. Taken together, this study suggests that PEITC can be an effective natural compound targeting colorectal CSCs through suppression of Wnt/ $\beta$ -catenin pathway, and thus may be a promising agent for colorectal cancer intervention.

### Biography

Caiyun Zhong has completed his PhD from University of California, Davis, USA in 2005 and received Diplomate of the American Board of Toxicology (DABT) in 2010. He is the Director and Professor of the Department of Nutrition and Food Safety, School of Public Health, Nanjing Medical University. He has published more than 40 papers in reputed journals and has been serving as an Editorial Board Member of journals.

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