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Zuo Jin Wan, a traditional chinese herbal formula, reverses P-gp mediate MDR *in vitro* and *in vivo*

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Abstract

Zou-Jin-Wan (ZJW), a typical traditional Chinese medicine (TCM) formula, has been also identified to be an effective anti-cancer drug in recent studies. In this study, we determined to evaluate the underlying mechanism of ZJW in the reversal effect of multidrug resistance on colorectal cancer *in vitro* and *in vivo*. Our results showed that ZJW significantly enhanced the sensitive of chemotherapeutic drugs in HCT116/L-OHP, SGC7901/DDP and Bel/Fu MDR cells. Moreover, combination of chemotherapy with ZJW could reverse the drug-resistance of HCT116/L-OHP cells and increase the sensitivity of HCT116/L-OHP cells to L-OHP、DDP、5-Fu、MMC *in vitro*, and inhibit the tumor growth in a colorectal MDR cancer xenograft model. ICP-MS results showed that ZJW could increase the concentration of chemotherapeutic drugs in HCT116/L-OHP cells in a dose-dependent manner. Furthermore, we showed that ZJW could reverse drug resistance of colorectal cancer cells by decreasing P-gp level *in vitro* and *in vivo*, which has been represented one of the major mechanisms that contribute to the MDR phenotype. Our study has provided the first direct evidence that ZJW play an important role in reversing multidrug drug resistance of human colorectal cancer, and might be considered as a useful target for cancer therapy.

Biography

As a researcher of Interventional Cancer Institute of Chinese Integrative Medicine, Dr. Sui has devoted herself to the achievements in scientific research. Her work on “COX-2 contributes to P-glycoprotein-mediated multidrug resistance via phosphorylation of c-Jun at Ser63/73 in colorectal cancer”, which aim to determine the relationgship between COX-2 and JNK pathway in P-glycoprotein-mediated multidrug resistance, and help solve the difficult problem in clinical. This work has been published in *Carcinogenesis* 2011; 32: 667-75.(IF:5.7)