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Screening allergenic components from Danshen injection via HMC-1/CMC online UHPLC-ESI-MS/MS system

Yuanyuan Lin, Meng Sun, Tao Zhang, Delu Che and Langchong He
Xi'an Jiaotong University, China

Danshen injection is a Traditional Chinese Medicine (TCM) injection widely used in China to treat coronary heart disease and angina. Adverse drug reactions of danshen injection, majorly manifested as allergic reactions, were among the leading causes of death from TCM injection. In the present study, an HMC-1/CMC online UHPLC-ESI-MS/MS system was established to screen and identify allergenic components in danshen injection, by which salvianolic acid A, isosalvianolic acid C, and salvianolic acid C were identified as potential allergenic components. Allergenic activities of salvianolic acid A, isosalvianolic acid C, and salvianolic acid C were investigated in HMC-1 cell intracellular Ca^{2+} mobilization assay, histamine release and β-hexosaminidase release tests *in vitro*. The results showed that the changes in Ca^{2+} influx in HMC-1 cell clearly increased under salvianolic acid A (100 μM), isosalvianolic acid C (12.5 μM) and salvianolic acid C (25 μM) treatment respectively. In addition, β-hexosaminidase and histamine release in HMC-1 cell were both markedly enhanced with increased concentrations of salvianolic acid A, isosalvianolic acid C, and salvianolic acid C. The HMC-1/CMC online UHPLC-ESI-MS/MS system developed in this study is an effective method for screening and identifying allergenic components from danshen injection, and it may potentially be used to screen allergenic components in other TCM injections.

Biography

Yuanyuan Lin is pursuing her PhD from School of Medicine, Xi'an Jiaotong University. She completed her graduation from South-Central University for nationalities in 2013. Her research interests are "Development of advanced analysis methods for rapid, accurate and high throughput screening target compounds from the complex samples such as Traditional Chinese Medicine injection". She is the Co-author of three original research papers published in international journals.

shuangmuyuanyuan@stu.xjtu.edu.cn

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