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## Preparation of modified citrus pectin fragments by UV-catalytic hydrogen peroxide oxidation reaction and their binding ability with lectin

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Modified Citrus Pectin (MCP) has been proved to possess the functions in moderating cancer progression and metastasis, which was mainly attributed to its ability to bind to the galactose-binding lectins Gal3 on the surface of cancer cells. In this study, MCP was obtained by UV-catalytic hydrogen peroxide oxidation reaction, a green and highly efficient method. Results showed that MCP fragments having varied molecular weight and different DE with a conserved galactose-binding site were obtained by UV-H2O2 method. The crude MCP products were further separated by means of gel chromatography, resulting in 8 MCP sub-fragments with molecular weight range of 5 kDa to 300 kDa. An in vitro system consisting of chicken blood red cell and Ricinus Communis Agglutinin (RCA), a test lectin vehicle for identifying the anticancer potential, was used for evaluation of the binding between MCP and RCA. Results indicated that all the MCP fragments exhibited binding affinity to RCA in a concentration-dependent manner. The binding ability of MCP for RCA was found to be highly related with the molecular weight of MCP fragments and the fraction with an average molecular weight of 6.1 kDa showed the highest binding capacity with RCA among all the tested samples with MIC value  $25\pm3.0 \,\mu$ g/mL (10 fold better than standard galactose). Such a result suggested the potential application of the MCP fragment on anti-cancer and immune-mediation fields.

## **Biography**

Zhaomei Wang is working as an Associate Professor of Food Science and Nutrition at South China University of Technology. Her research focuses on natural products and their bio-activities. She has published more than 20 peer-reviewed articles in the leading journals of food science.

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