PREPARATION OF CARDIOVASCULAR DISEASE-RELATED GENES MICROARRAY AND ITS APPLICATION IN EXPLORING LIGUSTRAZINE-INDUCED CHANGES IN ENDOTHELIAL GENE EXPRESSION

Li Zesong¹,², Li Deliang¹, Huang Jian², Zhang Wen², Ding Yu², Wang Shengqi¹,²

¹Beijing Institute of Radiation Medicine, 100850 Beijing, China; ²Shenzhen Yishengxiang Biological Products Co. Ltd, 518026 Shenzhen, China


To study the molecular mechanism of action of ligustazine, a low-density oligonucleotide microarray for cardiovascular disease-related genes, was constructed, and the preparation and hybridization protocols were optimized. Under the optimized conditions, the molecular mechanism of action of ligustazine was analyzed with human umbilical vein endothelial cells. After 4 h of treatment with 100 µg/ml of ligustazine, calcium-ATPase gene, sodium channel gene, P450c11 gene in human umbilical vein endothelial cells were up-regulated while apolipoprotein C-III gene was down-regulated. The results were shown to be reproducible. RT-PCR confirmed the results from microarray. These results suggest that ligustazine may act on the function of human umbilical vein endothelial cells via modulating the expressions of cardiovascular disease-related genes. This also demonstrates the use of oligonucleotide microarray technology as an approach to studying targets of active components of Traditional Chinese Medicine.

Key words: microarray, human umbilical vein endothelial cell, gene expression, ligustazine, cardiovascular disease

# correspondence: e-mail: sqwang@nic.bmi.ac.cn