Abstract of Presentation

Presentation Title:

PHARMACOGENOMICS AND THERAPEUTIC TARGET VALIDATION OF CARDIOVASCULAR DISEASE MODELS

Abstract:

The most important strategies in pharmacogenomics are gene expression profiling and the network analysis of human disease models. Delayed cerebral vasospasm after aneurysmal subarachnoid hemorrhage causes cerebral ischemia and infarction. Using a DNA microarray, a prominant upregulation of heme oxygenase-1 (HO-1) and heat shock protein (HSP) 72 mRNAs were observed in the basilar artery of a murine vasospasm model. Antisense HO-1 and HSP 72 oligodeoxynucleotide inhibited HO-1 and HSP 72 induction respectively, and significantly aggravated cerebral vasospasm. We found that gene induction of HO-1 and HSP 72 by clinical compounds reduced cerebral vasospasm, respectively. Moreover, we have also developed a unique heart failure model in zebrafish and identified several candidate genes as novel drug targets.

These results suggest that pharmacogenomics network analysis has the potential to bridge the gap between *in vitro* and *in vivo* studies, and could define strategies for identifying novel drug targets in various cardiovascular diseases.