A story about berberine

Jian-dong JIANG, Yan-xing HAN, Lu-lu WANG
(*Institute of Materia Medica Chinese Academy of Medical Sciences*, *Beijing 100050*, *China*)

Abstract: Berberine (BBR) is an alkaloid from plants like *Coptis chinensis* and is for many years an OTC drug in China for bacterial-caused diarrhea. We have identified BBR to be an effective drug in treating hyperlipidemia as well as hyperglycemia. Clinical studies showed that oral administration of BBR caused significant reduction of blood cholesterol, triglyceride as well as glucose in patients with hyperlipidemia and T2D, with no obvious side-effect. Mechanism studies have identified several molecular mechanisms involving in the mode of action of BBR. The cholesterol-lowering effect was associated with the extracellular-signal-regulated kinase (ERK) mediated LDLR mRNA up-regulation; the glucose-lowering effect mainly resulted from the protein kinase D mediated InsR expression and the activation of AMPK. The observed reduction of triglyceride by BBR might reflect its synergistic effect on both sugar and lipid metabolism. The interaction between gut microbiota and BBR explained the molecular mechanism of BBR′s intestinal absorption. BBR concentrated in liver after oral administration with a level many times more than that in blood. At least three CYP450 subtypes were responsible for BBR phase-Ⅰ metabolism. Structure-activity relationship of BBR was analyzed, and the clinical advantage of BBR was demonstrated. We consider BBR a new medicine for metabolic disorders.

Key words: berberine; metabolic disorders

Corresponding author: Jian-dong JIANG, E-mail: cnphars@163.com

Discovery of active components in herbal medicines using chromatographic separation coupled with online bioactivity assay

Shao-ping LI, Jing ZHAO
(*State Key Laboratory of Quality Research in Chinese Medicine*, *Institute of Chinese Medical Sciences*, *University of Macau*, *Macao SAR*, *China*)

Abstract: Herbal medicines have been attracting intensive attention with the increasing of health care. The screening and analysis of bioactive components in medicinal plants are very important for ensuring their efficacy, safety as well as quality. A conventional procedure for finding bioactive components is the chemical separation followed by pharmacological screening, or bioassay guided separation. In this presentation, chromatographic methods coupled with online bioassay developed in our lab were introduced for discovery of bioactive components from Chinese herbs.

Key words: herbal medicines; drug screening; chemical separation chromatographic methods coupled with online bioassay

Corresponding author: Shao-ping LI, E-mail: spli@umac.mo

Opposite angiogenic outcome of curcumin against ischemia and lung cancer models: *in silico*, *in vitro* and *in vivo* studies

Sheng-jun FAN, Xue-jun LI
(*Department of Pharmacology*, *Peking University*, *Beijing 100191*, *China*)

Abstract: **OBJECTIVE** With the rapid development of computer technology, achievements have