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## UPLC-Q-TOF/MS-based urine and plasma metabonomics study on the ameliorative effects of Aspirin eugenol ester in hyperlipidemia rats

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The main objective of this study was to investigate the ameliorative effects of AEE in hyperlipidemic rat. After five-week oral administration of aspirin eugenol ester (AEE) in high fat diet (HFD)-induced hyperlipidemic rats, the impact of AEE on plasma and urine metabonomics was investigated to explore the underlying mechanism by UPLC-Q-TOF/MS analysis. Blood lipid levels and histopathological changes of liver, stomach and duodenum were also evaluated after AEE treatment. Without obvious gastrointestinal (GI) side effects, AEE significantly relieved fatty degeneration of liver and reduced triglyceride (TG), low density lipoprotein (LDL) and total cholesterol (TCH) ( $P < 0.01$ ). Clear separations of metabolic profiles were observed among control, model and AEE groups by using principal component analysis (PCA) and orthogonal partial least-squares-discriminate analysis (OPLS-DA). 16 endogenous metabolites in plasma and 18 endogenous metabolites in urine involved in glycerophospholipid metabolism, fatty acid metabolism, fatty acid betaoxidation, amino acid metabolism, TCA cycle, sphingolipid metabolism, gut microflora and pyrimidine metabolism were considered as potential biomarkers of hyperlipidemia and be regulated by AEE administration. It might be concluded that AEE was a promising candidate for hyperlipidemia treatment. These findings could contribute to the understanding of action mechanisms of AEE and provide evidence for further studies.

### Biography

Ya-Jun Yang got his BSc degree in agriculture science (2004) from Northwest A & F University, and his MS degree in basic veterinary sciences (2007) from Northwest A & F University, too. During May 2010 to Oct 2010, he had worked in Royal Veterinary College, London University as an academic visitor with Prof Peter Lees. Currently, the main work of his research is on research and development of novel animal drug, including pharmacokinetics, pharmacology, toxicology of pharmaceutical and lead compounds screening with non-biological method.

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