[PB2-1] [10/17/2002 (Thr) 13:30 - 16:30 / Hall C]

Role of Kupffer Cells in Alteration of Vasoregulatory Gene Expression in Hepatic Ischemia/Reperfusion

Kim YongHyuk°, Kim SungHo, Lee SunMee

College of Pharmacy, Sungkyunkwan University, Suwon 440-746, Korea

Failure of the hepatic microcirculation is a major component of reperfusion injury in the liver. However, the vasoactive mediators
involved in the regulation of sinusoidal flow during reperfusion following hepatic ischemia remain to be identified. We investigate the role of Kupffer cells in hepatic ischemia/reperfusion (I/R)-induced imbalance of vasoregulatory gene expression. Rats were subjected to 60 min hepatic ischemia, followed by 5 h of reperfusion. Kupffer cells were inactivated by gadolinium chloride (GdCl3, 10 mg/kg body weight, intravenously) 1 day prior to ischemia. Liver samples were obtained 5 h after reperfusion for RT-PCR analysis of mRNA for genes of interest: endothelin (ET-1), its receptor ETA and ETB, endothelial nitric oxide synthase(eNOS), inducible nitric oxide synthase (iNOS), heme oxygenase-1 (HO-1), and tumor necrosis factor (TNF-α). Serum aspartate aminotransferase level markedly increased after I/R. This increase was attenuated by GdCl3 pretreatment. mRNA levels for iNOS and TNF-α significantly increased in I/R animals. This increase was markedly attenuated by GdCl3. In ischemic reperfused livers the levels of mRNA for ET-1, ETB, HO-1 were significantly elevated. In contrast, the expression of ETA receptor gene was reduced after I/R. Our findings suggest that activation of Kupffer cells plays an important role in the altered hepatic vasoregulatory gene expression induced by hepatic I/R.

[PB2-2] [10/17/2002 (Thr) 13:30 - 16:30 / Hall C]

Anti-asthmatic agents of Gastrodia elata Rhizoma MeOH extracts

Jang YongUn°, Suh MuHyun, Lee JiYun, Sim SangSoo, Whang WanKyun, Kim ChangJong

Department of Pathophysiology, College of pharmacy, Chung-Ang University

For the activity-guided separation on anti-asthmatic action from 4 fractions as n-hexane (yield, 0.09%), EtOAc (0.48%), BuOH (3.0%) and H2O (5.17%) fractions from MeOH extract (11.64%) of powdered Gastrodia elata Rhizoma (GER), some biological active agents were isolated by column chromatography (column, silica gel : elution solvent, CHCl3 : MeOH) according to the method of Junko Hayashi et. al. and Heihachiro Taguchi et. al. Compound I, II, III, IV, V, VI as henolic derivatives were isolated in the EtOAc, BuOH and EtOEt fractions. Anti-asthamatic actions of fractions and constituents from MeOH extract of GER were carried out to determine by the specific airway resistance (sRaw) at the early-phase asthmatic response (EAR) and late-phase asthmatic response (LAR) at the ovalbumin-sensitized guinea pigs in the double-chambered plethysmograph and recruitments of leukocytes, eosinophils, histamine, phospholipase A2, in bronchoalveolar lavage fluid (BALF). It shows that MeOH extract at a dose of 100mg/kg has significant anti-asthamtic activity in the EAR and LAR, and their EtOAc, BuOH and Hexane fractions inhibited significantly sRaw and recruitment of eosinophils and PLA2 activity in the LAR, at a oral dose of 20, 20 and 50 mg/kg, respectively. Compound I, V and VI significant anti-asthmatic activity at 20, 50 and 50 mg/kg, respectively. Their principal substance having anti-asdthmatic activity were compound I and V, phenolic derivatives and compound VI, 1,2-Bis [4-(β-D-glucopyranosyloxy) benzyl] citrate.

[PB2-3] [10/17/2002 (Thr) 13:30 - 16:30 / Hall C]

Pharmacological actions of H2O and MeOH extract of Opuntia ficus-indica Semen