changes in the body weight and blood biochemistry in rats. Aloesin were given orally at a rate of 100 mg/kg every 12 hours for 15 days. The rats in the control group received isotonic saline. The body weight and food consumption were measured every 12 hrs immediately prior to each treatment throughout the study period. At the end of treatment, blood biochemistry was measured. The final mean body weight was not altered at the end of the aloesin treatment as compared with control. Subchronic administration of a relatively high dose of aloesin did not appear to cause adverse effects as the biochemical parameter values including AST, ALT, albumin, glucose, BUN and creatinine levels were not altered as compared with the control values. (This work was supported by a grant from the Ministry of Health & Welfare 02-PJ1-PG4-PT04-0002)

[PB1-5] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Histamine Signaling Pathway in Sensory Neurons is Similar to Bradykinin

Lee Sanghee°, Koo Jae Yeon, Kim Sang Sung, Lee Jung Youn, Cho Hawon, Kim Byung Moon, Oh Uhtaek

The Sensory Research Center, Creative Research Initiatives, College of Pharmacy, Seoul National University

Histamine is found in most tissues of the body and activates polymodal nociceptors via unmyelinated afferent C-fibres. We have demonstrated that bradykinin, acting at B2 bradykinin receptors, excites sensory nerve endings by activating capsaicin receptors via production of 12-lipoxygenase metabolites of arachidonic acid in dorsal root ganglion. Histamine is known to the activator of phospholipase A2- arachidonic acid pathway via a G-protein- coupled H1 receptor. We, therefore, hypothesized that histamine activates capsaicin receptors by inducing the production of fatty acid agonists of capsaicin receptors in dorsal root ganglion neurons. This study shows that histamine evokes transient increases of intracellular Ca2+ concentration ([Ca2+]i) in a dose-dependent manner by stimulating H1 histamine receptor in dorsal root ganglion neurons. Histamine-induced [Ca2+]i increase was dependent on extracellular Ca2+ and was reversibly inhibited both by the capsazepine and by the SC0030, competitive antagonists of capsaicin receptor. The quinacrine and the nordihydroguaiaretic acid blocked histamine-induced Ca2+ influx in dorsal root ganglion neurons, but not the indomethacin. These results suggest that histamine increases Ca2+ influx by activating capsaicin channel via phospholipase A2- lipoxygenase pathway in neuronal cells, like bradykinin.

[PB1-6] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Cloning of a novel ion channel candidate by in silico gene mining

Shim Won Sik°, Kim Man Su, Yang Young Duk, Park Seung Pyo, Kim Byung Moon, Oh Uhtaek

The Sensory Research Center, Creative Research Initiatives, College of Pharmacy, Seoul National University

Capsaicin, a pungent ingredient in chili pepper, is known to excite sensory neurons that mediate pain sensation. This effect of capsaicin is determined by unique receptors and the capsaicin receptor (transient receptor potential subfamily V, member 1 (TRPV1)) was cloned recently. TRPV1 contains six transmembrane domains and three ankyrin repeats at N-terminal. This characteristic architecture is common in other ion channels in TRPV families. Taking notice of these structural similarities, seeking of novel ion channel candidates residing in genome

sequences in silico, molecular cloning of the candidate and elucidation of the function were aimed in this study.
Based on the protein sequences of total genes predicted from human genome, prediction of transmembrane domains was performed by TMHMM and genes containing at least two transmembrane domains were selected. These selected genes were then searched if they share similarities with both ankyrin repeats and well-known ion channels by the conserved domain-searching program called HMMER.
As a result, an ion channel candidate gene named ANKTM1, with six transmembrane domains and multiple ankyrin repeat at N-terminal but shares low similarity with TRPV1, was found. Although ANKTM1 is already cloned gene, identification of its role or function as an ion channel has not been followed. Particularly, a mouse homologue of ANKTM1 (AMKTM1-like protein) is a predicted model gene, which is not cloned yet. Therefore, in this study, ANKTM1-like protein was targeted for cloning and characterization as an ion channel. Custom primers for RT-PCR were designed based on predicted model sequences. Successfully, PCR products matching to predicted size were obtained from brain and dorsal root ganglia (DRG). Its sequences were matched to predicted sequence with only slight difference. To identify the function as an assumed ion channel, cRNA of ANKTM1-like protein was injected into Xenopus oocyte and expressed. Then, various ligands or stimuli were given on oocyte to check if the putative channel opens or not.

Poster Presentations - Field B2. Pathology

[PB2-1] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Effect of Trolox C in the Vasoregulatory Gene Expression during Hepatic Ischemia/Reperfusion

Eum HyunAe°, Lee SunMee

Colleage of Pharmacy, Sungkyunkwan University

The present study was done to determine the effect of trolox C, a hydrophilic analogue of vitamin E, on hepatic injury, especially alteration in vasoregulatory gene expression during ischemia and reperfusion. Rats were subjected to 60 min of hepatic ischemia in vivo. Rats were treated intravenously with trolox C (2.5 mg/kg) or vehicle (PBS, pH 7.4), 5 min before reperfusion. Liver samples were obtained after 5 hr and 24 hr reperfusion for RT-PCR analysis of mRNA for genes of interest: endothelin (ET-1), potent vasoconstrictor peptide, its receptor ET_A and ET_B, vasodilators endothelial nitric oxide synthase (eNOS), inducible nitric oxide synthase (iNOS), heme oxygenase-1 (HO-1), and cyclooxygenase-2 (COX-2). Serum alanine aminotransferase and lipid peroxidation levels were markedly increased after ischemia and reperfusion. This increase was significantly suppressed by trolox C. mRNA levels for ET-1 significantly increased after ischemia and reperfusion. This increase was markedly attenuated by Trolox C. ET_B expressi n significantly increased in ischemic animals, with no significant difference between vehicle and trolox C group. HO-1 was increased by ischemia and reperfusion. The increase in HO-1 w s prevented by trolox C 5 hr after reperfusion. Our findings suggest that ischemia and reperfusion induces imbalanced hepaic vasoregulatory gene expression and trolox C ameliorates this change through its free radical scavenging activity.

[PB2-2] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]