significantly protected CA1 hippocampal neurons against 20 min transient forebrain ischemia. Also, baicalein, the main components of Scutellaria baicalensis showed a similar neuroprotective effects. We further examined in vitro antioxidative effects of methanol extracts of Scutellaria baicalensis and its fraction, and baicalein using LDH and MTT assay in PC 12 cells. Thus, the neuroprotective effects of methanol extracts of Scutellaria baicalensis and baicalein in vivo was explained in part by its inhibitory effects on oxidative stress of significantly protected PC 12 cells after hydrogen peroxide treatment.

[PB3-3] [ 04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3] ]

## Comparison of pharmacokinetic profiles and brain uptakes of antibody-transferrin fusion proteins specific for the rat transferrin receptor

Lee NY°, Kang YS

College of Pharmacy, Sookmyung Women's University

The antibody(Ab)-transferrin fusion protein has been constructed to deliver drugs across the blood-brain barrier. This fusion molecules consist of the end of hinge and heavy chain constant region 3 ($C_H3$) of antibody specific for the trasnsferrin receptor genetically fused to transferrin.

Ab-transferrin fusion proteins was iodinated by chloramine T method and pharmacokinetic parameters and brain uptake of iodinated Ab-transferrin fusion proteins was measured by intravenous injection technique.

In results, brain uptakes of Ab specific for the rat transferrin receptor (TAIQ) is similar to mouse monoclonal antibody, OX26 specific for the rat transferrin receptor. But, brain uptakes of Ab-transferrin fusion proteins specific for the rat transferrin receptor are very low comparison with OX26.

Our results show that only TAIQ may be used to target to the brain for delivery of neuropharmaceutical drug.

[PB3-4] [ 04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3] ]

## Mutations of Walker type ATP-binding motifs of vanilloid receptor 1(VR1) abolish the augmenting effect of intracellular ATP

Kwak J*, Hwang SW, Jung J, Cho HW, Shin JE, Shon JM, Oh YK, Hong YM, Lee S-Y and Oh U

Sensory Research Group, Creative Research Initiatives, College of Pharmacy, Seoul National University

Activity of ion channel is modulated by intracellular factors such as ATP. Previously, we reported that the addition of ATP to the bath of along with CAP caused a two-fold increase in the activity (NPo) of capsaicin (CAP)-activated channel. The augmenting effect of ATP is Mg2+-independent and induced by non-hydrolyzable analogs of ATP, AMPPNP and ATPgS. These results suggest the possible presence of the ATP-binding sites in the channel. We, therefore, mutated VR1, cloned CAP channel, on each putative Walker A- or B-type ATP-binding motif to clarify the implication of ATP binding. CAP evoked single-channel currents (icap) in inside-out excised membrane patches isolated from Xenopus oocytes expressing wild-type VR1. In these patches, the addition of 2 mM ATP greatly augmented icap by 232 ± 19% (n = 7). In oocytes injected with RNA of the mutant (VR1-K735R) at the Walker A-type motif, CAP activated icap as normally observed in oocytes expressing wild-type VR1. The VR1-K735R mutant, however, completely blocked the augmenting effect of ATP. In addition, the mutant (VR1-D178N) at the Walker B-type motif also blocked the