peanut agglutinin (PNA) positive reaction in MHJ group were shown in microvilli of surface mucous cell and apical surface of chief cell as normal morphology. The ICAM-1 (CD54) positive reaction in MHJ group were diminished in basal region of gastric mucosa and arteioles of submucosa. The distribution of apoptotic cell in erosion evoked regions were decrease in MHJ group. As results indicated that the MHJ was effective in protection for Gastropathy by NSAID.

C118

Effect of Chitosan on Cadmium-induced Cytotoxity in C6-glioal Cell

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Casapse-3 protease was known as a key role of apoptotic enzyme, caspase-3 activity was a central event that occurs upstream of DNA fragmentation during apoptosis.Protective effect of PKC affecting This study was investigated that chitosan pretreatment inhibited the apoptosis process by controlling the activity of death enzymes. We analyzed the effect of chitosan on two key apoptotic factor, caspase-3 protease and DNA fragmentation. Cadmuim (50 mg/ml)-induced DNA fragmentation and we observed nuclear fragment by hoechst stain. Caspase-3 activeties were increased for 3hours compared with control. Pretreatment of chitosan (150 mg/ml) inhibited cadmium cytoxicity. When chitosan was pretreated for 30min, cadmium cytoxicity was suppressed in a dose-dependent manner. And the cell of chitosan pretreatment protected DNA fragmentation by cadmium. To establish the extent of chitosan effects on the apoptotic mechanism, we assessed the effects of chitosan on caspase activity by examining of activation of caspase-3 protease, which was inhibited by chitosan. From these above results, it is suggest that the protective effect of chitosan prereatment against cadmium-induced cytotoxicity was shown by inhibiting caspase-3 activation. And also DNA fragmentation was protected by inhibiting caspase-3 protease activation.

C119

The Cure Effect of Coptitis rhizoma on Allergic Contact Dermatitis 2 -based on apoptosis of skin and suppression of lymphnode

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This study was performed to investigate the cure effect of Coptitis rhizoma extract(CRE) on allergic contact dermatitis. The sensitization were caused by one application of 25ul of 5% 2,4-dinitrochlorobenzene(DNCB) onto an abdominal skin of BALB/C mice. 2 weeks later, the allergic contact dermatitis were elicitated with 4ul of 2.5% DNCB and then mice were administered with CRE, a dose of 0.33ml/kg/day, for 48 hours. In CRE treated group, the distribution of apoptotic cell and Fas positive reacted cell of epidermis were conspicuously decreased. On the other hand, the distribution of apoptotic cell and Bax positive reacted cell of dermis were remarkably increased. The number of CD4(L3T4), CD8(Ly-2), IL-1b, CD25R(IL-2R), CD11b(Mac-1), CD54(ICAM), CD 106(VCAM) and CD56(NK-1.1) positive reacted cells were decreased and degree of these reaction were weaked in lymph node of

CRE treated mice. As results indicated that the immune-suppressive effect of CRE extract work on the mitigation of allergic contact dermatitis.

C201

Histochemical and Ultrastructural Identification of Enzymatically Isolated Calcium Oxalate Crystals in the Leaf of Ipomoea batatas

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In situ distribution, histochemical identification, ultrastructural configuration and energy dispersive x-ray spectrometric analysis of intracellular crystals of calcium oxalate in the leaf of sweet potato (Ipomoea batatas) were studied by light and scanning electron microscopy. Leaf segements were cleared in the mixture of sodium hydroxide and chloral hydrate, and observed with light microscope. Calcium oxalate crystals were isolated by incubation of segmented leaf tissue in the enzyme mixture of macerozyme, cellulase and pectinase. Isolated protoplasts were bursted by adding of water and mild agitation. Isolated crystals were purified by sucrose density gradient centrifugation. Histochemical identification of the crystals were carried out with silver nitrate-rubeanic acid methods to investigate the hydrate form of calcium oxalate. Ultrastructural identification and energy dispersive x-ray crystallography with scanning electron microscope have been carried out to investigate the topography and ionic configuration of the crystals.

C202

Development of the Secondary Plasmodesmata in C_4 Photosynthetic Cell Interfaces

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Features of the plasmodesmata (PD), especially on Kranz bundle sheath-mesophyll (BS-M) interfaces, were examined from seed leaves to maturity in order to monitor and follow changes occurring during leaf development in C_4*Salsola* species. In addition to cotyledons, leaves on growing plants were placed in four categories by the developmental stage and size as follows: primordial (< 0.5 ㎜), immature (3-4 ㎜), young (7-9 ㎜), and mature (> 1.5 ㎜). The etiolated leaf primordia exhibited only simple primary PD in extremely thin primary walls, while the immature leaves developed still simple PD but the cell walls began to thicken unevenly on areas where PD were not established. Formation of the secondary PD was initiated soon after the immature stage but before young leaves. Highly branched complicated PD were well distinguished during leaf maturation. Numerous secondary PD were developed in the pit fields and conspicuous median cavities formed from several anastomosing PD. The most interesting feature was noticed in the BS-M interface of the cotyledons. Numerous, median cavity forming secondary PD occurred frequently in thin walls as those found in the mature leaves. However, no primary pit fields were detected on the cell wall during cotyledon growth. Higher and complicated plasmodesmatal connections at the BS-M cell interfaces in cotyledons, young, and mature leaves suggest BS-M routes as the predominant symplastic pathway that suffice the rapid movement of C_4-acids required for the growth.

C203