carbohydrate of RTA significantly decreased uptake by liver and kidney, and resulted in prolonged circulating half-life. These results suggest that RTA prepared by carbohydrate-directed PEGylation would be more effective when constructed as immunotoxin for tumor targeting.

[PE1-31] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

Comparative re-evaluation of protein denaturation for PLG microspheres prepared by W/O/W multiple emulsification processes.

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The purpose of this study was to re-evaluate the degree of protein denaturation during microencapsulation with poly (lactide-co-glycolide) (PLG) polymer. Ovalbumin(OVA), a model antigen, was entrapped in PLG microspheres by W/O/W multiple emulsification method in various conditions, i.e. with or without addition of polyvinylpyrrolidone(PVP) as a stabilizer for primary emulsification. PLG microspheres were suspended in PBS solution(pH 7.4) and incubated with shaking at 37.5℃. Release medium was collected periodically and analyzed using the micro-BCA protein assay method and ELISA method. In preliminary study with SDS-PAGE, typical bands for OVA showed that the primary structure of protein was not affected significantly. However, there was a decrease in immunoreactivity of OVA. In order to express the degree of protein denaturation, antigenicity ratio(AR) was introduced as follows: amount of immunoreactive of OVA / total amount of OVA released × 100(%). Especially the addition of primary emulsification stabilizer greatly influenced on protein denaturation : i.e. about 65% of AR with stabilizer versus less than 35% of AR without stabilizer. Therefore, in order to obtain information on structural integrity of protein, it is better to re-evaluate the protein denaturation employing immunoreactivity measurement for antigen entrapped in PLG microspheres.

[PE1-32] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

Intranasal Delivery of Poly(ethylene glycol) Conjugated Salmon Calcitonin in Rats

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Activated PEG molecules (2000 and 5000 Da) were attached to salmon calcitonin via covalent linkage. Mono-PEG-sCT was then separated by size exclusion chromatography and characterized by CE and MALDI-TOF mass spectrometry. Six Male Sprague-Dawley rats (220-280 grams) per group were used. sCT (2 IU/kg) and PEG-sCT (2 IU/kg) were dissolved in saline solution and directly applied onto the nasal mucous membrane of rat by using micropipet (50 ul/rat) under anesthesia, respectively. Blood was withdrawn at a certain time intervals and centrifuged to collect the plasma samples. Serum calcium concentration was measured by o-cresolphthalein complexone complex assay using UV spectrophotometer. Serum calcium concentrations following nasal placebo administration remained around 100 % of the basal calcium levels during 6 hours. Nasal administration of native sCT (2 IU/kg) resulted in a slight decrease in serum calcium with a maximum decrease of less than 10 % at 30 min and returned to the control level within two hours. Significantly prolonged decrease of serum calcium were observed over six hours after nasal administration of PEG-sCTs. It was also observed that PEG5000-sCT had the less hypocalcemic effect that PEG2000-sCT. Therefore, these results indicate that PEG attachment to sCT can be investigated as a novel nasal delivery system of therapeutic peptides.

[PE1-33] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

Effect of Enhancers on the in vitro Skin Permeation of Ciclopirox from novel Soft