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The biomedical applications of chitosan have been widely researched. FN mediates its biological effects through binding to the hetero-dimeric transmembrane glycoproteins, integrins, which physically couple the cytoskeleton to the ECM. FN binds to the integrin through a consensus site including the Arg-Gly-Asp (RGD) sequence within tenth type III module (Ruoslahti & Pierschbacher 1987). A short sequence Pro-His-Ser-Arg-Asn (PHSRN) has also been identified as a synergistic motif within ninth type III module for binding to $\alpha 5\beta 1$ integrin (Aota et al. 1994). Through these interactions, integrins play a critical role in the regulation of cellular functions including cell adhesion, proliferation, migration and differentiation. In this study, the biological activity of protein-grafted chitosan was assayed by measuring the attachment of osteogenic cell, HOS(Human Osteogenic Sarcoma). Chitosan grafted with FGF and FN-FGF fusion proteins, biomimetic polymer surfaces, could be provided as a good material for tissue engineering.

[PE1-19] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

In vitro and in vivo evaluation of meloxicam capsule

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Purpose. To develop a hard gelatine capsule containing meloxicam (Yuhan Meloxam capsuleTM), in vitro dissolution characteristics and bioavailability in beagle dog were compared with commercial product (Mobic capsuleTM). **Methods.** Meloxicam capsuleTM was prepared by powder filling method using meloxicam, lactose, magnesium stearate, and others. The release of Meloxicam capsuleTM and Mobic capsuleTM were monitored by USP dissolution method under various dissolution conditions – dissolution medium (pH 1.2, 4.0, 6.8 and water). The paddle rotation speed was kept at 50 rpm. We estimated the similarity of dissolution profiles of two formulations by calculation of dissolution similarity factors(F2). The pharmacokinetics of two formulations was investigated after oral administration in healthy male beagle dogs. The blood samples were collected at scheduled intervals and the plasma concentrations of meloxicam were analyzed by HPLC method.**Results & Conclusion.** F2 values of two formulations were all above 50. The dissolution profiles of Meloxicam capsuleTM were very similar to those of Mobic capsuleTM. When orally administered to beagle dogs, the AUC₀₋₃₀, h/ml, $2.69 \pm 0.29\mu\text{g/ml}$, respectively. The relative \square Cmax were 38.73 ± 7.02 ug bioavailability of the drugs from the capsule was 110.6 %, 122.7%, when estimated based on AUC₀₋₃₀ and Cmax , respectively.

[PE1-20] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Electro-transport of Nicotinamide Adenine Dinucleotide Phosphate (NADPH)

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Transdermal iontophoresis is a physical enhancement technique to facilitate the delivery of primarily charged molecules across the skin. Principal mechanism of iontophoresis is electrorepulsion experienced by the charged solutes under the application of a potential gradient. In this work, we have investigated several factors (concentration of NADPH, current density) that can affect the iontophoretic flux. We also studied the stability of NADPH in aqueous solution with/without various antioxidants such as butylated hydroxy toluene (BHT), resveratrol, tocopherol and Vitamin C. BHT and tocopherol (0.01 % w/w) exhibited minimal stabilizing effect, however resveratrol and vitamin C (0.01 % w/w) showed significant stabilizing effect. Increase in stability was proportional to the concentration of Vitamin C, but no concentration dependency with resveratrol was observed. Iontophoresis experiment was conducted using side-by-side diffusion cell. Constant current was applied to the Ag/AgCl electrode. The concentration of NADPH in the receptor compartment was determined using HPLC. Flux increase was proportional to the concentration of NADPH in the donor solution, and to the current density. Vitamin C decreased the flux.