

intensities represented by [photo-stimulated luminescence (PSL)-background (BG)/area (S)] values in WBA. The intensities of ⁵⁹Fe in case of iron-DFA complexes were higher than that of iron alone in almost organ, liver, spleen, heart and kidney and so on. The concentration-time profiles of iron in whole blood were showed that the iron concentration after administration of iron-DFA complexes was greater than that of iron alone. These results suggest that the DFA III and IV may be used as a promoter of iron absorption for the treatment of iron deficiency anemia.

[PE3-1] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl. Bldg 3]]

PREPARATION AND CHARACTERIZATION OF POLYLACTIC ACID NANOPARTICLES WITH POLYETHYLENE IMINE AS DNA CARRIER

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Using the cationic lipid and polycations the non-viral gene delivery has been developed for gene transfer. The size, charge and solubility of the complex formed by DNA and polycation are dependent on the charge ratio of the polycations and DNA. In the present study, we report the preparation and characterizations of the polylactic acid (PLA) and poly(lactide-co-glycolide) (PLGA) nanoparticles containing pME185/βgal, a mammalian expression construct that expresses βgalactosidase as a model DNA. The effect of polyethylene imine (PEI) on the characteristics of nanoparticles and adsorption efficiency with DNA were also examined. Nanoparticles were prepared by a dialyzing method. The shape and morphology of nanoparticles were characterized by scanning electron and transmission electron microphotograph. The stability of the nanoparticles in suspension was evaluated by turbidity measurement. Complex formation between the nanoparticles and plasmid DNA was examined by gel electrophoresis. When the PEI amount in polymers was increased, the mean diameter of the resulting nanoparticles was decreased. The ζpotential of nanoparticles showed a highly negative value in PLA or PLGA nanoparticles without PEI, while a positive value in the PLA or PLGA nanoparticles with PEI. The nanoparticles in suspension exhibited good dispersion stability until 15 days of incubation though a small decrease in turbidity at the initial time. An increase in nanoparticle amount caused a gradual disappearance of the DNA. This indicates that all of DNA was trapped on the surface of the nanoparticles. This work was supported by the Brain Korea 21 Project.

[PF1-1] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl. Bldg 3]]

Preliminary Study on Architecture of Laboratory Information Management System for Clinical Trial

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Clinical trial is one of keystones for the development of new drugs and needs total management of huge amount of data acquired from many different sources and statistical analysis of the acquired data. The management of clinical data from clinical trial should be compliant with several regulations such as GCP, GLP and GALP. Computerized system for experimental design of the clinical study and collection, manipulation, statistical treatment, reporting and evaluation of clinical data is needed to be compliant to those regulations. This system should be under a certain level of security on data management, user authentication, audit trailing. An architecture of laboratory information management system is proposed on the Internet environment with PC server. The proposed system includes Linux as OS, Oracle as DBMS, Apache as web server and gcc, Perl, PHP as development tools. The system is designed to have 5 modules: Administrator module, Clinical trial design module, Data entry module, Data management module, Data retrieval/Reporting module. The proposed model is designed to be compliant to the related regulations and a set of security measures are proposed for the system.