over 700 to 1100 nm was used to develop a calibration model. The milk samples from milking cow were measured without homogenization. The transmittance spectra were collected by using glass test tubes. The calibration model was developed and predicted by using partial least squares (PLS) algorithm. In order to reduce the scattering effect from fat globules in NIR milk spectra, multiple scattering correction was carried out and the scattering effect was successfully reduced. Accurate determination of milk composition was performed, showing the potential use of this method for real time on-line monitoring in a milking process.

Oral Presentations - Field E

[E1. Pharmaceutics] [E2. Pharmacokinetics] [E3. Physical Pharmacy]

[OE-1] [04/20/2001 (Fri) 13:30 - 13:45 / Room 4]

Processing Pharmaceuticals using Supercritical Fluids

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The application of dense gases for the processing of pharmaceuticals has attracted considerable interest in recent years. Supercritical anti-solvent (SAS) recrystallization process is considered a promising technology for the production of micron or submicron particles for pharmaceuticals. In this process, carbon dioxide is used as antisolvent for the solute, which is initially solubilized in a conventional solvent. Upon CO2 addition, the dissolving power of the initial solution is reduced, and solute precipitation is triggered. Drugs are rapidly precipitated from organic solvents and resulting in the production of micro or submicro-particles with narrow particle size distribution.
We have developed a continous flow type apparatus for the process of Solution Enhanced Dispersion by Supercritical fluids (SEDS) and demonstrated that supercritical techniques are suitable for producing polymeric micro-particles such as poly(lactide-co-glycolide) (PLGA), poly(L-lactic acid) (PLLA) and polyglycolide (PGA) and submicro-particles of model proteins such as lysozyme and albumin. It is found that supercritical fluid process gives fine-tuning of particle size and particle size distribution by simple manipulations of the process parameters. We are able to produce large amount of pharmaceutical micro-particles continuously without any residual solvents. The proposed method will be applied as the basis of a new process for the preparation of drug delivery system.

[OE-2] [04/20/2001 (Fri) 13:45 - 14:00 / Room 4]

Adsorption of cyclosporin A during permeability study using Caco-2 cell monolayers

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The concentration of cyclosporin A (CsA) in diffusion cells was known to decrease significantly during transport across Caco-2 cell monolayers due to the adsorption of the drug onto the material of the diffusion cells. To find out the extent of adsorption of CsA, the adsorbed amounts of CsA on glassware and diffusion cells were determined. When 0.5μM-10μM CsA solutions were filled in 100ml