

Characteristics of lipophilic nanodispersed application systems

Abstract:

The master thesis brings a survey of microemulsions characteristics, suitable penetration enhancers characteristics, criterions for choice of microemulsion components and compendious survey of DLS (dynamic light scattering). An experimental part is oriented to the temperature influence on the viscosity and consistency of seven samples of emulsion systems containing of unsaturated fatty acids (samples A to G). Depending on temperature, the consistency is practically invariable, the viscosity decreases with increasing of temperature. The samples are expressively different in their viscosity from $2,2 \text{ mm}^2\text{s}^{-1}$ for emulsion G to $19,1 \text{ mm}^2\text{s}^{-1}$ for emulsion D. The consistency of every tested samples is nearly the same, about $\rho = 0,985 \text{ g}\cdot\text{cm}^{-3}$. The sample B was more expressively different in the size of its particles, it contained particles greater than 300 nm. The other tested samples had majority portion of particles with the size bellow 100 nm and they can be considered as suitable for next biopharmaceutic evaluation in light of the size of its particles. The DLS method was used for pilot assessment of temperature stability of samples, tentatively it wasn't necessary to eliminate any sample because of its unstability.