Pengaruh etanol dan asam oleat terhadap penetrasi liposom transdermal glukosamin menggunakan sel difusi franz = The effects of ethanol and oleic acid on transdermal liposome penetration of glucosamine using franz diffusion cell

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Abstrak

Liposom berperan sebagai pembawa obat larut air maupun larut lemak. Senyawa peningkat penetrasi seperti etanol dan asam oleat ditambahkan kedalam masing-masing formula untuk meningkatkan penetrasi glukosamin melalui membrane abdomen tikus Rattus norvegicus menggunakan sel Difusi Franz secara in vitro. Jumlah kumulatif glukosamin yang terpenetrasi tertinggi pada formula 1 (etanol) terjadi pada menit ke-60 sebesar 245,67 ± 2,56 µg/cm2 dengan laju penetrasi 245,67 ± 2,56 µg/cm2.jam; pada formula 2 (asam oleat) terjadi pada menit ke-90 sebesar 164,455 ± 3,61 µg/cm2 dengan laju penetrasi 109,64 ± 2,41 µg/cm2.jam. Formula terbaik untuk sediaan glukosamin yang mengandung senyawa peningkat penetrasi etanol. Uji kestabilan fisik dilakukan melalui pengamatan organoleptis, pH, viskositas, konsistensi, serta uji siklus. Ukuran partikel liposom yang diperoleh hasil ekstruksi rata-rata 0,465 µm.

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Liposomes act as carriers of water-soluble drugs and lipid-soluble. Penetration enhancing compounds such as ethanol and oleic acid were added to each formula to increase the penetration of glucosamine through abdominal rat Rattus norvegicus membrane using Franz diffusion cells in vitro. The highest cumulative amount of glucosamine penetrated was 245,67 ± 2,56 g/cm 2 , the formula 1 with ethanol, occurred at the 60th minute with penetration rate of 245,67 ± 2,56 g/cm 2.hour; the formula 2 with oleic acid, occurred at the 90th minute as much as 164,455 ± 3,61 g/cm 2 with penetration rate of 109,64 ± 2,41 g/cm 2.hour. The best formula for the preparation of glucosamine is the formula containing ethanol as penetration enhancer. Testing is done through observation of physical stability organoleptis, pH, viscosity, consistency, and cycling test. The average particle size of liposomes obtained by extrusion was 0,465 m.