Formulasi dan uji penetrasi mikroemulsi natrium diklofenak dengan metode sel difusi franz dan metode tape stripping = Formulation and penetration test of sodium diclofenac microemulsion by franz diffusion cell and tape stripping method

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Abstrak

Natrium diklofenak adalah obat AINS yang banyak digunakan menjadi bentuk sediaan transdermal. Obat AINS yang diberikan secara transdermal mempunyai konsentrasi obat di plasma yang lebih rendah daripada pemberian secara oral. Peristiwa itu mungkin disebabkan karena adanya interaksi antara natrium diklofenak dengan stratum korneum kulit. Dalam penelitian ini, digunakan bentuk sediaan mikroemulsi. Mikroemulsi diharapkan dapat meningkatkan penetrasi obat karena mengandung konsentrasi surfaktan yang tinggi. Kemampuan berpenetrasi natrium diklofenak dari sediaan mikroemulsi diuji secara in vitro menggunakan sel difusi Franz dan metode tape stripping.
Hasil uji penetrasi dengan sel difusi Franz menunjukkan bahwa selama 8 jam, natrium diklofenak telah terpenetrasi sebesar 9,3185%. Hasil uji penetrasi dengan metode tape stripping menunjukkan bahwa obat tidak tertahan di kulit dalam jumlah besar. Jumlah konsentrasi obat yang terdapat di kompartemen reseptor, membran kulit dan kompartemen donor sel difusi Franz mendekati 100%.
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Sodium diclofenac is one of NSAIDs which widely formulated as transdermal dosage form. The transdermal dosage form of NSAIDs has a lower concentration in plasma than oral route. This phenomenon may be caused of interaction between sodium diclofenac and skin?s stratum corneum. Microemulsion dosage form was used in this research. The use of microemulsion dosage form is aimed to increase drug penetration because of its high surfactant content. The penetrability of sodium diclofenac microemulsion was tested by in vitro method using Franz diffusion cell and tape stripping method.
The result from penetration test by Franz diffusion cell was sodium diclofenac had penetrated for about 9.3185% during 8 hours. Penetration test by tape stripping method revealed that sodium diclofenac was not restrained in skin membrane for significant amount. The sum of sodium diclofenac in compartment receptor, skin membrane and compartment donor of Franz diffusion cell is around 100%.