Formulasi gel transfersom glutation sebagai antioksidan dan uji penetrasi menggunakan sel difusi franz = Formulation of glutathione transfersome gel as antiooxidant and penetration evaluation using franz diffusion cell

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Abstrak

Tujuan penelitian ini adalah membuat sediaan gel transfersom glutation yang berkhasiat sebagai antioksidan dan menguji daya penetrasi kemudian membandingkannya dengan gel glutation yang tanpa dibuat transfersom. Formulasi transfersom dibuat 3 formula yang berbeda pada konsentrasi glutation (0,25;0,5;1g/50ml). Metode pembuatan trasnfersome menggunakan metode hidrasi lapis tipis. Suspensi transfersom kemudian dimasukkan ke dalam sediaan gel dan diuji daya penetrasi menggunakan sel difusi Franz. Suspensi transfersom formula ke- 3 dengan ukuran partikel 145,61 nm; polidispersity indeks 0,212 dan efisiensi jerapan 73,76%±0,85 dipilih untuk dibuat sediaan gel. IC50 serbuk glutation sebesar 72,29±0,57 ppm. Jumlah kumulatif glutation terpenetrasi dalam gel transfersom lebih besar yaitu 4718,1566±887,344gcm-2 sedangkan gel glutation tanpa transfersom sebesar 2177,6410±152,64gcm-2. Fluks pada gel transfersom juga lebih besar yaitu 567,4380±112,52gcm-2jam-1sedangkan gel glutation tanpa dibuat transfersom sebesar dan 256,9135±68,74. gcm-2jam-1. Berdasarkan hasil tersebut dapat disimpulkan bahwa gel transfersom glutation dapat berpenetrasi melalui kulit secara in vitro lebih baik dibandingkan dengan gel glutation tanpa dibuat transfersom.

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The aim of this study was to formulate glutathione transfersome gel which have antioxidant activity and evaluate its in vitro penetration compared to glutathione nontransfersome gel. Three transfersomes formulations which differ glutathione concentration (0.25;0.5;1g/50 ml) were made using thin layer hidration method. Antioxidant testing using DPPH method and penetration testing using Franz Difussion Cell.The third formulation was choosen to be loaded into gel because the characteristics were the best: vesicle size was 145.61 nm ; polydispersity index was 0.212 and entrappment efficiency was 73.76%±0.85. It was found that IC50 Glutathione powder is 72.29±0.57 ppm. The cumulative amount permeated of glutathione transfersome gel was bigger (4718.1566 ± 887.344gcm-2) than nontransfersome gel (2177.6410 ± 152.64gcm-2). Transfersome gel flux (567.4380 ± 112.52gcm-2h-1) was bigger compared to non transfersome gel (256.9135 ± 68.74. gcm-2h-1). The conclusion is glutathione transfersomes gel has better penetration than glutathione nontransfersome gel.