Formulasi dan uji penetrasi sediaan transdermal yang menggunakan matriks koproses xanthan gum dan amilosa tersambungsilang 12 = Formulation and penetration study of transdermal using co processed excipient of xanthan gum and 12 crosslinked amylose as matrix

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Abstrak

[ABSTRAK
Transdermal merupakan rute penghantaran yang didesain agar dapat menghantarkan zat aktif menuju sistemik melalui permukaan kulit. Sediaan transdermal dapat diformulasikan melalui sistem matriks. Eksipien terbaru yang dapat berfungsi sebagai matriks yaitu koproses xanthan gum dan amilosa tersambungsilang-12 (Ko-CLA12-XG). Penelitian ini bertujuan untuk memformulasi dan menguji fungsi eksipien Ko-CLA12-XG sebagai matriks dalam sediaan transdermal. Karakterisasi eksipien dilakukan dengan menghitung derajat substitusi. Pengujian keberhasilan sediaan transdermal dengan pengujian penetrasi secara in vitro dan in vivo. Pengujian penetrasi in vitro menggunakan alat sel difusi franz dengan menggunakan membran abdomen tikus jantan galur Sprague-Dawley dan pengujian penetrasi in vivo dilakukan pada tikus jantan galur Sprague-Dawley. Dari hasil penelitian, diperoleh data DS sebesar 0,3 ± 0,006, fluks 410 ± 103 μg.cm-2.jam-1, AUC 16,09 ± 1,68 μg.jam.ml-1, Ke 0,12 ± 0,02 jam-1, dan MRT 8,76 ± 1,23 jam. Berdasarkan data tersebut, eksipien Ko-CLA12-XG dapat digunakan sebagai matriks dalam sediaan transdermal.
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ABSTRACT
Transdermal is a route of administration which designed to deliver active ingredient to systemic through skin. Transdermal form can be formulated by matrix system. Co-processed Excipient of Xanthan Gum and 12-Crosslinked Amylose (Ko-CLA12-XG) is known to be used as matrix. This present research was intended to formulate and evaluate transdermal form which using Ko-CLA12-XG as matrix. Excipient was characterized by measuring substitution degree. Evaluation effect of transdermal by in vitro and in vivo penetration study. In vitro penetration study used franz diffusion and abdomen skin of male Sprague Dawley rat and in vivo penetration study used male Sprague Dawley rat. Substitution degree, flux, AUC, Ke, MRT were 0,3 ± 0,006, 410 ± 103 μg.cm-2. hour-1, 16,09 ± 1,68 μg.hour.ml-1, 0,12 ± 0,02 hour-1, and 8,76 ± 1,23 hour, respectively. Based on those data, Ko-CLA12-XG can be used as matrix in transdermal form., Transdermal is a route of administration which designed to deliver active ingredient to systemic through skin. Transdermal form can be formulated by matrix system. Co-processed Excipient of Xanthan Gum and 12-Crosslinked Amylose (Ko-CLA12-XG) is known to be used as matrix. This present research was intended to formulate and evaluate transdermal form which using Ko-CLA12-XG as matrix. Excipient was characterized by measuring substitution degree. Evaluation effect of transdermal by in vitro and in vivo penetration study. In vitro penetration study used franz diffusion and abdomen skin of male Sprague Dawley rat and in vivo penetration study used male Sprague Dawley rat. Substitution degree, flux, AUC, Ke, MRT were 0,3 ± 0,006, 410 ± 103 μg.cm-2. hour-1, 16,09 ± 1,68 μg.hour.ml-1, 0,12

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