Uji manfaat ekstrak kasar kolagen dari teripang stichopus hermanni sebagai bahan pelembab kulit = Efficacy study of crude collagen extract from sea cucumber stichopus hermanni for skin moisturizer

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Abstrak

Kolagen digunakan dalam industri kosmetik sebagai bahan pelembab. Dinding tubuh teripang mengandung kolagen sehingga berpotensi sebagai pelembab kulit. Penelitian bertujuan membandingkan ekstrak kolagen kasar dari teripang Stichopus hermanni budidaya dan alam yang diperoleh dengan metode ekstraksi yang tepat serta memperoleh sediaan krim pelembab yang mengandung ekstrak kolagen kasar teripang yang bermanfaat melembabkan kulit. Ekstraksi menggunakan perpaduan cara kerja Trotter et al. (1995) dan Saito et al. (2002). Identifikasi kolagen menggunakan metode Dot Blot. Ekstrak kolagen kasar dibuat sediaan krim dengan konsentrasi 5%. Uji stabilitas fisik sediaan krim dilakukan selama 12 minggu dan uji keamanan kepada sukarelawan menggunakan metode uji tempel. Uji manfaat dilakukan selama 4 jam pada daerah lengan bawah dengan parameter peningkatan kadar air kulit. Hasil ekstraksi menunjukkan ekstrak kolagen kasar dari teripang budidaya (77,47% dw) lebih besar daripada teripang alam (55,93% dw). Ekstrak kolagen kasar mengandung kolagen tipe I sebesar 16%. Sediaan krim ekstrak kolagen kasar menunjukkan kestabilan selama 12 minggu dan hasil uji keamanan tidak menimbulkan iritasi sehingga aman digunakan secara topikal. Hasil uji manfaat menunjukkan sediaan krim ekstrak kolagen kasar mampu mempertahankan kelembaban kulit selama 4 jam. Krim esktrak kolagen kasar 5% memberikan pengaruh kelembaban yang berbeda nyata dibandingkan krim plasebo, yaitu pada pengaplikasian krim selama 1 jam.
.....Sea cucumber is well-known to contain collagen that potent to apply as a skin moisturizer. Collagen have been used in many cosmetics industries as a moisturizer. The objectives of the study are to compare crude collagen extract of sea cucumber Stichopus hermanni from nature and cultivation by proper extraction method and to assess the efficacy of a formulated cream containing crude collagen extract of sea cucumber as a human skin moisturizer. The crude collagen extract was obtained by a combination method of Trotter et al. (1995) and Saito et al. (2002). Collagen was identified by Dot Blot method and then was corporated into formulated cream to make a concentration of 5% (w/v). Physical stability test was done for 12 weeks and human safety test was done by using a patch test. Efficacy study was done for 4 hours of which the increasing skin moisture content was the main parameter to be measured. The result of the study showed that crude collagen extract of sea cucumber from cultivation (77.47% dw) was greater than from nature (55.93% dw). The crude collagen extracts contained 16% of type I collagen. The crude collagen extract cream showed stability for 12 weeks and was safe to be used topically as evidenced by no skin irritation occurred in the patch test. The result of efficacy test showed that crude collagen exctract cream was able to maintain skin moisture for 4 hours experiment and provided a moisture effect significantly different from placebo cream during 1 hour application.