Uji Antibakteri Jerawat secara In Vitro, Stabilitas Fisik dan Patch Test Krim yang Mengandung Etil P-Metoksi Sinamat dari Rimpang Kencur (Kaempferia galanga L.) = Antibacterial Tests against Acne In Vitro, The Physical Stability and Patch Test Using Cream Containing Ethyl P-Methoxy Cinnamate extracted from Rimpang Kencur (Kaempferia galanga L.)

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Abstrak

[ABSTRAK
Aktivitas bakteri merupakan salah satu penyebab jerawat. Rimpang kencur (Kaempferia galanga L.) memiliki aktivitas antibakteri yang berasal dari senyawa etil p-metoksi sinamat (EPMS). Tujuan penelitian ini adalah untuk mengetahui aktivitas antibakteri dari EPMS ekstrak rimpang kencur terhadap P.acne, S.aureus dan S.epidermidis serta stabilitas fisik krim dan keamanan krim anti jerawat. Kristal EPMS diperoleh melalui proses maserasi dengan pelarut heksan, lalu pemurnian dan identifikasi karakteristik kristal EPMS. Uji aktivitas antibakteri dan konsentrasi hambat minimum (KHM) pada konsentrasi EPMS 0,3; 0,6; 1,2 dan 2,4% dengan metode difusi cakram dan dilusi cair. Hasil menunjukkan semua konsentrasi EPMS memiliki aktivitas antibakteri secara signifikan ($p<0,01$) dengan zona jernih secara berturut-turut terhadap P.acne (9,00; 11,50; 14,50; 16,00 mm), S.aureus (9,00; 11,50; 16,50; 22,00 mm) dan S.epidermidis (10,50; 12,50; 20,50; 27,00 mm). Senyawa EPMS dengan konsentrasi 0,6; 1,2 dan 2,4 % terbukti memiliki konsentrasi hambat minimum (KHM) terhadap bakteri P.acne, sedangkan pada S.aureus dan S.epidermidis pada konsentrasi 1,2 dan 2,4%. Berdasarkan hasil evaluasi stabilitas fisik, krim EPMS 1,2% memiliki stabilitas fisik baik hingga akhir penelitian. Dari hasil uji keamanan (pacth test) pada 12 subjek tidak terjadi iritasi alergi, sehingga krim EPMS 1,2% aman digunakan dalam sediaan topikal.
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ABSTRACT
An activity of certain bacterias is one of the causes of acne. Rimpang kencur (Kaempferiagalanga L.) has an antibacterial agent from compound ethyl pmethoxy cinnamate (EPMC). The purpose of this research is to find out the activities of antibacterias using EPMC rimpang kencur extracts against P.acne, S.aureus and S.epidermidis with the physical stability of the cream and its safety use as an anti acne cream. The EPMC crystals are obtained through the process of maceration using hexane solvent, purification and identification of the characteristic of EPMC crystals. The activity test of the antibacterial and the minimum inhibitory concentration (MIC) of EPMC are 0,3; 0,6; 1,2 and 2,4% was

done using disk diffusion method and broth dilution test. The result shows that all EPMC concentration has significant antibanterial activity (p<0,01) respectively gaining clear zone against P.acne (9,00; 11,50; 14,50; 16,00 mm), S.aureus (9,00; 11,50; 16,50; 22,00 mm) and S.epidermidis (10,50; 12,50; 20,50; 27,00 mm). EPMC compound with the 0,6; 1,2 dan 2,4 % concentration is proven to have minimum inhibitory concentration (MIC) against P.acne bacterias, while on the S.aureus dan S.epidermidis reaches up to 1,2 dan 2,4% concentration. Based on the results of the evaluation on the physical stability, EPMC 1,2% cream has a good physical stability until the final research. From the results of safety use (pacth test) on 12 subjects there were no evidence of allergic irritation, therefore cream EPMC 1,2% is safe to be used in topical preparation;An activity of certain bacterias is one of the causes of acne. Rimpang kencur (Kaempferiagalanga L.) has an antibacterial agent from compound ethyl pmethoxy cinnamate (EPMC). The purpose of this research is to find out the activities of antibacterias using EPMC rimpang kencur extracts against P.acne, S.aureus and S.epidermidis with the physical stability of the cream and its safety use as an anti acne cream. The EPMC crystals are obtained through the process of maceration using hexane solvent, purification and identification of the characteristic of EPMC crystals. The activity test of the antibacterial and the minimum inhibitory concentration (MIC) of EPMC are 0,3; 0,6; 1,2 and 2,4% was done using disk diffusion method and broth dilution test. The result shows that all EPMC concentration has significant antibanterial activity (p<0,01) respectively gaining clear zone against P.acne (9,00; 11,50; 14,50; 16,00 mm), S.aureus (9,00; 11,50; 16,50; 22,00 mm) and S.epidermidis (10,50; 12,50; 20,50; 27,00 mm). EPMC compound with the 0,6; 1,2 dan 2,4 % concentration is proven to have minimum inhibitory concentration (MIC) against P.acne bacterias, while on the S.aureus dan S.epidermidis reaches up to 1,2 dan 2,4% concentration. Based on the results of the evaluation on the physical stability, EPMC 1,2% cream has a good physical stability until the final research. From the results of safety use (pacth test) on 12 subjects there were no evidence of allergic irritation, therefore cream EPMC 1,2% is safe to be used in topical preparation, An activity of certain bacterias is one of the causes of acne. Rimpang kencur (Kaempferiagalanga L.) has an antibacterial agent from compound ethyl pmethoxy cinnamate (EPMC). The purpose of this research is to find out the activities of antibacterias using EPMC rimpang kencur extracts against P.acne, S.aureus and S.epidermidis with the physical stability of the cream and its safety use as an anti acne cream. The EPMC crystals are obtained through the process of maceration using hexane solvent, purification and identification of the characteristic of EPMC crystals. The activity test of the antibacterial and the minimum inhibitory concentration (MIC) of EPMC are 0,3; 0,6; 1,2 and 2,4% was done using disk diffusion method and broth dilution test. The result shows that all EPMC concentration has significant antibanterial activity (p<0,01) respectively

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