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"KAJIAN FORMULASI NANOEMULSI BERBAGAI MINYAK ATSIRI DAN AKTIFITAS-NYA SEBAGAI ANTIBAKTERI"

ABSTRAK

Latar Belakang: Nanoemulsi merupakan emulsi dengan ukuran droplet berkisar antara 100 nm sampai 500 nm (Shakeel et al.,2008). Nanoemulsi dari minyak atsiri merupakan antimikroba alami yang aktif terhadap bakteri,virus dan jamur.minyak atsiri juga diketahui memiliki aktivitas biologi yaitu sebagai antibakteri terhadap bakteri patogen manusia, antara lain staphylococcus, aureus, Escherichia coli, Salmonella typhi, dan Helicobacter pylori.
Tujuan: Penelitian ini mengkaji formulasi nanoemulsi berbagai minyak atsiri terhadap aktivitas antibakteri dan mengetahui formulasi nanoemulsi karakteristik yang baik.
Metode: Review artikel menggunakan desain ekprimental dengan mengkaji 5 artikel yang terdiri dari 1 jurnal internasional dan 4 jurnal nasional terakreditasi yang secara keseluruhan merupakan artikel hasil penelitian.
Hasil: Hasil studi kelima artikel yaitu minyak lengkuas dengan konsentrasi minyak atsiri 5% dengan ukuran droplet nanoemulsi yang terbentuk 47 nm memiliki diameter zona hambat 10,0 mm terhambat petumbuhan *H.phylori*, Sedangkan daun jahe memiliki konsentrasi 62,5 (µL / mL) memiliki diameter zona hambat 25 ± 1.0 terhadap pertumbuhan minyak *S.mutans*, ekstrak kayu manis memiliki diameter zona hambat terhadap bakteri *E.coli* 32±1 dan S.typhi 36±2. Dan minyak lemon myrtle memiliki konsetrasi 77,7±0,55 memiliki diameter zona hambat 0,211±0,011,dan minyak esensial myrtle 80.2±1.06 memiliki diameter zona hambat 0,234±0,004.
Simpulan: Formlasi nanoemulsi berbagai minyak atsiri menghasilkan karakteristik yang baik dan formulasi nanoemulsi berbagai minyak atsiri memiliki aktivitas sebagai antibakteri terhadap pertumbuhan E.coli, S.aureus, Salmonella thypi dan H.pylori.

Kata Kunci: Antibakteri, nanoemulsi, miyak atsiri

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"STUDY OF NANOEMULATION FORMULATION OF VARIOUS ESSENTIAL OILS AND ITS ACTIVITIES AS AN ANTIBACTERIAL"

Abstract

Background: Nanoemulsions are emulsions with droplet sizes ranging from 100 nm to 500 nm (Shakeel et al.,2008) Nanoemulsions of essential oils are natural antimicrobials that are active against bacteria, viruses and fungi.Essential oils are also known to have biological activity that is antibacterial to human pathogenic bacteria, such as staphylococcus, aureus, Escherichia coli, Salmonella typhi, and Helicobacter pylori.
Purpose: This study examined the formulation of nanoemulsions of various essential oils against antibacterial activity and found that nanoemulsion formulations are good characteristics.
Method: Review articles using exprimental design by reviewing 5 articles consisting of 1 international journal and 4 accredited national journals that are overall research articles.
Result: The results of the fifth study article are galancut oil with an essential oil concentration of 5% with a droplet nanoemulsion size that formed 47 nm has a 10.0 mm diameter inhibition zone inhibited by H.phylori growth, While ginger leaves have a concentration of 62.5 (µL / mL) have a blockable zone diameter of 25 ± 1.0 against the growth of *S.mutans* oil, cinnamon extract has a diameter of the slave zone against *E.coli* bacteria 32±1 and *S.typhi* 36±2. And lemon myrtle oil has a conciliation of 77.7±0.55 has a buffer zone diameter of 0.211±0.011,and myrtle essential oil 80.2±1.06 has a slave zone diameter of 0.234±0.004.
Conclusion: The formylation of nanoemulsions of various essential oils produces good characteristics and the formulation of nanoemulsions of various essential oils has activity as an antibacterial against the growth of E.coli, S.aureus, Salmonella thypi and H.pylori.

Keywords: Antibacterial, nanoemulsion, miyak essential