

ABSTRACT

ANTIBACTERIAL EFFECTIVENESS TEST OF TURMERIC RHIZOME EXTRACT *Curcuma domestica* AGAINST *Escherichia coli* and *Shigella dysenteriae*

By

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Background: Turmeric is one of the plants that is becoming a concern, especially in tropical areas such as in Indonesia. Turmeric have many known functions, in the health sector, turmeric also have properties in overcoming diarrhea or have an antibacterial effect against bacteria that cause diarrhea. Turmeric rhizome (*Curcuma domestica*) have antibacterial compounds, namely terpenoids, saponins, and tannins. This study was conducted to examine the antibacterial effect of Turmeric rhizome extract (*Curcuma domestica*) against *Escherichia coli* and *Shigella dysenteriae* bacteria.

Methods: This research was conducted November 2022 at the Laboratory of Microbiology and Parasitology, Faculty of Medicine, University of Lampung. Turmeric rhizome extract was obtained from the Laboratory of Organic Chemistry, University of Lampung with Maceration extraction technique. The antibacterial activity of turmeric rhizome extract was carried out in vitro using the disc diffusion method on Mueller-Hinton Agar media.

Results. The results of this study showed that there was antibacterial activity of *Curcuma domestica* turmeric rhizome extract against *Escherichia coli* and *Shigella dysenteriae* bacteria with strong inhibition at concentrations of 50% and 100%, but the antibacterial effect did not exceed the positive control.

Conclusion. There is antibacterial effectiveness of *Curcuma domestica* turmeric rhizome extract against the growth inhibition of *Escherichia coli* and *Shigella dysenteriae*.

Keywords: *Escherichia coli*, turmeric rhizome, *Shigella dysenteriae*.

ABSTRAK

UJI EFEKTIVITAS ANTIBAKTERI EKSTRAK RIMPANG KUNYIT *Curcuma domestica* TERHADAP BAKTERI *Escherichia coli* DAN *Shigella dysenteriae*

Oleh

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Latar Belakang: Kunyit merupakan salah satu tanaman obat keluarga atau TOGA yang sedang menjadi perhatian banyak kalangan terutama di wilayah tropis seperti di negara Indonesia. Kunyit juga telah banyak diketahui fungsinya, di bidang kesehatan kunyit juga memiliki khasiat dalam mengatasi diare atau memiliki efek antibakteri terhadap bakteri-bakteri yang dapat menyebabkan diare. Rimpang kunyit (*Curcuma domestica*) memiliki senyawa antibakteri yaitu terpenoid, saponin, dan tanin. Penelitian ini dilakukan untuk menguji efek antibakteri ekstrak rimpang kunyit (*Curcuma domestica*) terhadap bakteri *Escherichia coli* dan *Shigella dysenteriae*.

Metode: Penelitian ini dilakukan pada bulan November 2022 di Laboratorium Mikrobiologi dan Parasitologi Fakultas Kedokteran Universitas Lampung. Ekstrak rimpang kunyit *Curcuma domestica* didapatkan dari Laboratorium Kimia Organik Universitas Lampung dengan teknik ekstraksi yaitu maserasi. Aktivitas antibakteri ekstrak rimpang kunyit (*Curcuma domestica*) dilakukan secara *in vitro* menggunakan metode *disc diffusion* pada media *Mueller-Hinton Agar*.

Hasil: Hasil penelitian ini menunjukkan adanya aktivitas antibakteri ekstrak rimpang kunyit *Curcuma domestica* terhadap bakteri *Escherichia coli* dan *Shigella dysenteriae* dengan daya hambat kuat yaitu pada konsentrasi 50% dan 100%, namun efek antibakteri ini tidak melebihi kontrol positif.

Simpulan : Terdapat efektivitas antibakteri ekstrak rimpang kunyit *Curcuma domestica* terhadap daya hambat pertumbuhan *Escherichia coli* dan *Shigella dysenteriae*.

Kata kunci: Rimpang kunyit, *Escherichia coli*, *Shigella dysenteriae*.