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Journal Content

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[Home](#) > [Vol 2, No 6 \(2016\)](#) > [A. O](#)

ANTIMICROBIAL ACTIVITIES OF CRUDE METHANOLIC EXTRACT AND FRACTIONS OF THE BULB OF CRINUM JAGUS (LINN)

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Abstract

Crinum jagus is a medicinal plant used traditionally in Nigeria to treat infectious diseases such as tuberculosis and malaria. In the present study, the antimicrobial properties of the crude extract and chromatographic fractions from the bulb of Crinum jagus were investigated against clinical and laboratory isolates of bacteria and fungi using both agar well diffusion and agar dilution methods. Ampicillin (antibacterial) and tiazonazole (antifungal) were used as positive reference standard drugs. The crude plant extract and its fractions demonstrated broad spectrum activity against all the bacteria and fungi isolates tested. Fraction 1 (24.00 mm zone of inhibition, MIC: 0.20 µg/mL, MBC: 0.39 µg/mL, MFC: 0.78 µg/mL) demonstrated the highest activity, followed by Fraction 2 (24.00 mm zone of inhibition, MIC: 0.39 µg/mL, MBC: 0.78 µg/mL, MFC: 1.56 µg/mL). Fraction 3 (20.00 mm zone of inhibition, MIC: 0.78 µg/mL, MBC: 0.78 µg/mL, MFC: 1.56 µg/mL). The crude extract however demonstrated the least activity against the test bacteria and fungi (18.00 mm zone of inhibition, MIC: 6.25 mg/mL, MB: 25.00 mg/mL, MFC: 50 mg/mL). Preliminary phytochemical analysis revealed the presence of alkaloids, phenols, flavonoids, saponins and steroids which may account for the antimicrobial activity of the plant. The result of the study demonstrated that the extract and fractions of the bulb of Crinum jagus has appreciable antimicrobial properties and suggest that it may be useful in the treatment of microbial infections.

Keywords

Crinum jagus, chromatographic fractions, antimicrobial activities, inhibition.

Full Text:

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