



## THE EFFECT OF CRUDE EXTRACTS AND FRACTIONS OF JATROPHA CURCAS AGAINST CLINICAL ISOLATES OF S. AUREUS AND E. COLI

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### Abstract:

This study investigated the use of *Jatropha curcas* as a medicinal plant used in treating many microbial infections. The lack of scientific standardization and possible therapeutic alternatives against antibiotic resistant bacterial infections indicates a strong need for continuous effort to validate the use of plant material as alternative therapy regimens with similar or higher antibiotic beneficial properties. The phytochemical analysis was carried out on aqueous and ethanolic extracts of stem bark, root bark and leaves of the plant using standard methods. The antibacterial potency was initially determined by the agar well diffusion method for both crude extracts and fractions of *jatropha curcas* followed by quantitative evaluation of antibacterial activity by Minimum inhibitory concentration and Maximum bactericidal concentration. Root extract of *Jatropha curcas* was observed to be more effective than the stem bark and leave extracts due to its ability to inhibit all the test bacteria. It recorded the highest antibacterial activity with mean inhibition zone diameter ranging from  $2.67 \pm 0.00$ - $15.33 \pm 0.00$  mm against *S. aureus* with ethanolic root and  $1.4 \pm 0.00$ - $14.7 \pm 0.00$  mm with aqueous root. Root ethanol hexane recorded the highest activity with fractions on *S. aureus* isolate with mean inhibition zone of  $31.7 \text{ mm} \pm 0.1$  with the lowest from root ethanol aqueous fraction with  $1.56 \text{ mm} \pm 0.1$  at a concentration of 100 mg/ml respectively. The plant extract had no activity on *E. coli*. This study has proven the effectiveness and efficacy of *Jatropha curcas* in inhibiting the growth of *S. aureus*, with slight or no activity on *E. coli* pathogenic bacteria of clinical origin.



### Biography:

Zakari Y. Ibrahim is a Ph.D. student of Physical and theoretical chemistry, Ahmadu Bello University, Zaria, Nigeria. Having obtained his MSc. degree in Physical Chemistry at the same University. He has published quite a number of articles and his main current research interest include but not limited to drug design and General Physical Chemistry.

### Recent Publications:

1. IBRAHIM Z.Y, et al; QSAR and molecular docking based design of some indolyl-3-ethanone- $\alpha$ -thioethers derivatives as Plasmodium falciparum dihydroorotate dehydrogenase (PfDHODH) inhibitors; 2020
2. IBRAHIM Z.Y, et al; Quantum Modelling of some potent, non-toxic antimalarial compounds; 2019
3. IBRAHIM Z.Y, et al; Structure-toxicity Relationships of Naphthylisoquinoline Derivatives as Antimalarial Agents Using Molecular Descriptors; 2016
4. IBRAHIM Z.Y, et al; Ex O. Hoffm (Asteraceae); 2015

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