الآيـة

قال تعالى:

(وَقُلْ رَبِّ زِدْنِي عِلْمًا)

سورة طه (آية رقم 114)

DEDICATION

To the greatest our beloved country.
To my father, mother, sisters, husband, daughter and son.
I dedicate this piece of work.
With my Love.

Acknowledgment

Thanks to Allah for giving me fortune, aptitude and patience to conduct thisstudy.

I am greatly indebted to my supervisor Prof. HasabAlrasoulAbdelbagi Mohamed Ahmed, Sudan University of Science and Technology, for supervision and guidance throughout this study.

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المستخلص

اتجه الباحثون حديثا للطرق الخضراء والصديقة للبيئة لتحضير الجسيمات النانوية وذلك لسلامة البيئة وقلة التكلفة . يهدف هذا البحث لتخليق جسيمات الفضة النانوية لاستخدامها كمضاد لفطريات كانديدا البيكانس ,هذه الفطريات تسبب الطفح الجلدي في الحفاض بالنسبة للأطفال كما تسبب الالتهابات المهبلية عند السيدات. تم تصنيع جسيمات الفضة النانوية باستخدام محلول مائي من مستخلص بذور الحلبة, يعمل مستخلص النبات كعامل للاختزال والاستقرار. تم خلط مستخلص الحلبة مع ثلاثة تركيزات من محلول نترات الفضة للحصول على جسيمات الفضة النانوية التي تم تشخيصها بالمجهر الالكتروني الماسح. أظهرت صورة المجهر الالكتروني الماسح الجسيمات النانوية في حدود حجم النانومتر. وهذه الجسيمات تم استخدامها لفحص النشاط المضاد للفطريات باستخدام طريقة انتشار القرص الورقي واظهرت تأثير واضح على فطريات الكانديدا البيكانس.

Abstract

Recently, researchers turned to green and environmentally friendly ways to prepare nanoparticles, due to the safety of the environment and low cost. This research aims to synthesize silver Nano-particles to be used as an antifungal for *Candida Albicans*. This fungus causes diaper rash in children and vaginal infections in women. Silver nanoparticles were synthesized using an aqueous solution of fenugreek seed *Trigonella Foenum-graecum* extract, the plant extract acts as a reducing and stabilizing agent. Fenugreek extract was mixed with three concentrations of silver nitrate solution to obtain silver nanoparticles, which were characterized by scanning electron microscopy. The scanning electron microscope image showed nanoparticles in the nano-meter size range. These particles were used to examine the antifungal activity using the paper disc diffusion method and showed a clear effect on *Candida Albicans*.

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List of Abbreviations

NPs	**Nano-Particles**
Ag	**Silver**
Au	**Gold**
SEM	**scanning electron microscopy**
AFM	**Atomic force microscope**
SPM	**Scanning probe microscopes**
TEM	**Transmission electron microscope**
SERS	**Surface-Enhanced Raman Spectroscopy**
$AgNO_3$	**Silver Nitrate**
XRD	**X-ray diffractometry**
FTIS	**Fourier transform infrared spectroscopy**
(XPS)	**X-ray photoelectron spectroscopy**
Pt	**Platinum**
DLS	**Dynamic light scattering**
TEM	**transmission electron microscopy**
ATCC	**American Type Culture Collection**
MHA	**Mueller Hintonagar**
NCCLS	**National Committee for Clinical Laboratory Standards**