

## Abstract

The objective of this study is to extract the alkaloids from Alhazza shrub "*haplophyllum tuberculatum*" which grows in Sudan, and to determine the structure of the extracted alkaloids.

Alhazza samples were collected from Aljazeera Slang (25kilometre north of Khartoum) . The samples were prepared for analysis, by separating leaves from stem, drying them in an open area in a well ventilated room, crushing them into small pieces and then grinding them to fine powder.

Extraction was done using soxhlet with methanol as solvent. The methanol extract was defatted to remove waxes, gums, and chlorophyll using hexane as defatting solvent.

The defatted methanol extract was further extracted by chloroform to separate the alkaloidal constituents of the plant.

Identification of the presence of the alkaloids was made by Mayer's reagent and Dragendorff's reagent and both gave positive results.

The alkaloidal constituent was separated by thin layer chromatography using petroleum ether : ethyl acetate 2:3 as solvent system .The extracted alkaloids were named as compound1and compound2.

Spectral analysis UV, IR, <sup>1</sup>HNMR, MS of compound1 and compound2 was done by UV, IR, <sup>1</sup>HNMR, MS spectrophotometers and the following structures were proposed .

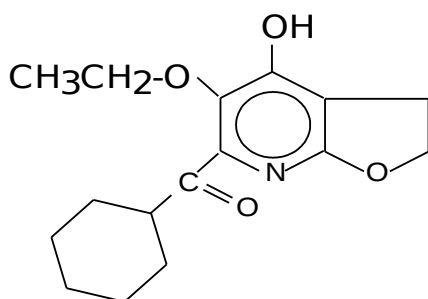
## النتائج

الهدف من الدراسة هو تحديد قلويدات نبات الحزا الذى ينمو فى وسط وشمال السودان وتحديد البنية التركيبية لاقلويدات المستخلصه . تم جمع العينات من منطقه الجزيره سلانج التى تبعد 25 كيلومتر شمال الخرطوم . اخذت العينات من موقع واحد . تم تجهيز العينات بداية بفصل الاوراق عن السيكان وتجفيفها وطحنها . تم الاستخلاص بواسطه جهاز السوكسلت بواسطه 70% ميثانول كمذيب وبعد ذلك ازيلت الدهون والشمع وصبغه الكلوروفيل وذلك باستخدام الهكسان .

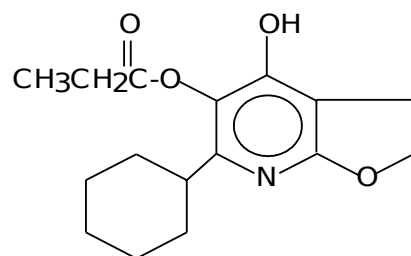
تم استخلاص اخر بواسطه الكلوروفورم لمستخلص الميثانول وذلك لاستخلاص القلويدات .

للتعرف على وجود قلويدات استخدمت الكواشف درا قندورف وماير واعطت نتيجة موجبه لقلويدين .

تم فصل القلويدين بواسطه كروماتوغرافيا الطبقة الرقيقة باستخدام ايثربتروليوم واسيتات الايثيل بنسبه 2:3 كنظام مذيب . تمت تسميه القيين المستخلصين بالعينه compound1 والعينه 2compound . اجريت التحاليل الطيفيه التاليه : الاشعه فوق البنفسجيه , الاشعه تحت الحمراء , الرنين النووى المغناطيسى وطيف الكتله و قد اقترح التركيب التالى .



Compound1



compound2

## **Acknowledgement**

After thanking Allah, I would like to express my sincere gratitude to my supervisor Dr. Izzeldin Elfatih for his careful supervision, valuable advice and kind treatment during the course of this study.

Also I would like to thank Dr. Ahmmad Alsadig, Co-Supervisor, for his keen interest in this study; and for his great help and assistance ; and for his valuable advice.

I am also grateful to the staff of the department of analytical chemistry, Industrial research and consultancy center, for their help and assistance.

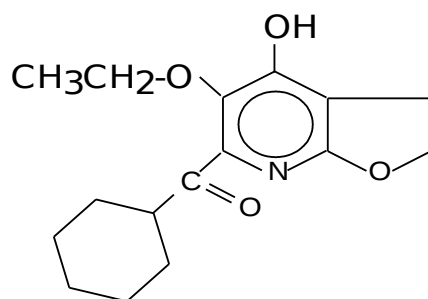
I would also like to thank Mrs. Nadia Hassan Khatir and Mr. Abd Alkarim Mohammed Ibrahim at the faculty of science, University of Sudan for their great help.

My thanks are also extended to the staff of the Faculty of Pharmacy, University of Khartoum for their kind help.

I would also like to thank the Human Resources and Development Administration for the financial support.

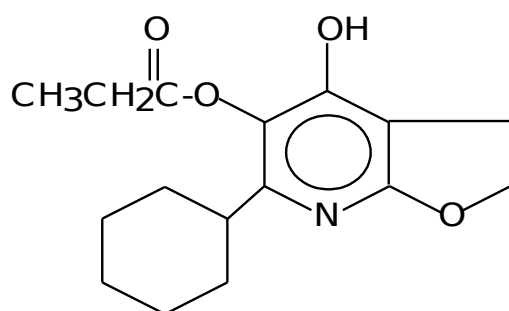
I would also like to thank Mr. Tarig Abdalla for his support

Compound1 structure:

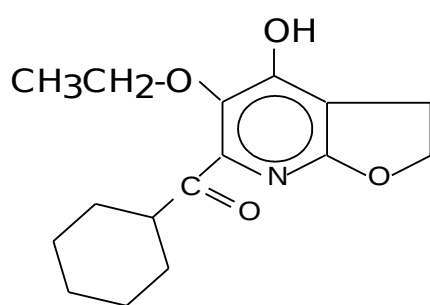


Cyclohexyl (5-ethoxy-4-hydroxy-2,3-dihydrofuro [2,3-*b*] pyridin-6-yl) methanone

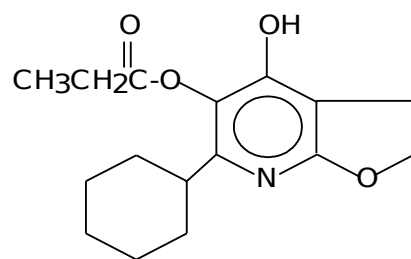
Compound2 structure:



6-cyclohexyl-4-hydroxy-2,3-dihydrofuro [2,3-*b*] pyridin-5-yl propanoate



Compound1



compound2

**Sudan University of Science & Technology**

**Phytochemical Investigation of The Leaves And  
Stems of *Hapophyllum tuberculatum***

المؤلف: د. زهور مالحوب الحبش  
المشرف: د. إزددين Elfatih Barakat  
المشرف المساعد: د. أحمد السيد

A Thesis submitted for the fulfillment of MSc Degree in  
Chemistry

***By***

***Zohour Mahgoub Elbashir***

**Supervisor**

***Dr. IZZELDIN ELFATIH BARAKAT***

**ASSO. Professor of organic chemistry college of science SUST**

**Co - Supervisor**

***Dr. AHMMED ELSADIG***

**ASSO. Professor of organic chemistry college of science SUST**

***March 2009***

## **Dedication**

dedicated to:

My husband

My parents

My twins Abd Alla and Reel

