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 (25 kilometre 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 compound1 and compound2.

Spectral analysis UV, IR, $^1$HNMR, MS of compound1 and compound2 was done by UV, IR, $^1$HNMR, MS spectrophotometers and the following structures were proposed.
الهدف من الدراسة هو تحديد قلويدات نبات الحزا الذي ينمو في وسط وشمال السودان وتحديد البنية التركيبية للقلويدات المستخلصه. تم جمع العينات من منطقة الجزيرة سلانج التي تبعد 25 كيلومتر شمال الخرطوم. أخذت العينات من موقع واحد. تم تجهيز العينات بداية بفصل الأوراق عن السباقات وتجفيفها وطحنها. تم الاستخلاص بواسطة جهاز السوكست بترومور بنسبة 70٪ ميثانول كمذيب وبعد ذلك ازالت الدهون والشمع وصبغه الكلوروفيل وذلك باستخدام الهكسان.

تم استخلاص آخر بواسطة الكلورفوروم لمستخلص الميثانول وذلك لاستخلاص القلويدات. للتعرف على وجود قلويدات استخدمت الكميات مستخدمه دراشفورد وماير واعطت نتائجه موجب لقلويدين.

تم فصل القلويدتين بواسطة كروماتوغرافيا الطبقة القديمة باستخدام ايثر البنزويل وميترات الابيض بنسبة 3:2 كنظام مذيب. تمت تسميه القيين المستخلصين بالعينه 1والعينه 2.

التحليل المطياني التالي: الابشع فوق البنفسجي، الابشع تحت الحمراء،الرنين النووي المغناطيسي وطيف الكتلة وقد أقترح التركيب التالي.

Compund1

\[
\begin{align*}
\text{CH}_3\text{CH}_2\text{O} & \quad \text{OH} \\
\end{align*}
\]

Compund2

\[
\begin{align*}
\text{CH}_3\text{CH}_2\text{C} & \quad \text{O} \\
\end{align*}
\]
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Compound1 structure:

Cyclohexyl (5-ethoxy-4-hydroxy-2, 3-dihydrofuro [2, 3-\textit{b}] pyridin-6-yl) methanone

Compound2 structure:

6-cyclohexyl-4-hydroxy-2, 3-dihydrofuro [2, 3-\textit{b}] pyridin-5-yl propanoate
Compound 1

Compound 2
Sudan University of Science & Technology

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

A Thesis submitted for the fulfillment of MSc Degree in Chemistry

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*March 2009*
Dedication

dedicated to:

My husband
My parents
My twins Abd Alla and Reel