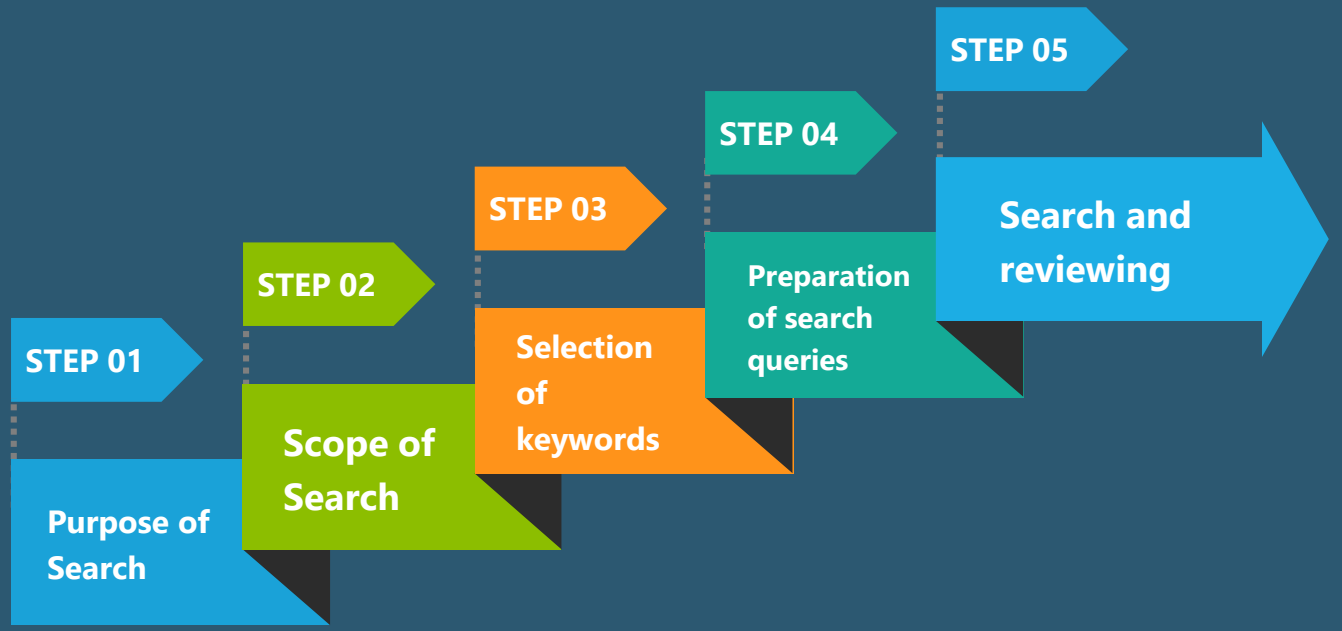
PATENT SEARCH

Patent Search Process



Patent Search Technique

- Boolean Operator
- Adjacent of Proximity Operators
- Truncation
- Nesting
- Phrases

Boolean Operators

- AND, ANDNOT, OR, XOR
- Solar AND Battery
- Solar ANDNOT Battery
- Solar OR Battery
- Solar XOR Battery
- Solar NEAR Battery

Proximity Operators

- **Corn AND Fertilizer**

WO 2008/040445 also describes that 4-{[(6-chloropyrid-3-yl)methyl](methyl)amino}furan-2(5*H*)-one can be present in its commercially available formulations and in the use forms, prepared from these formulations, as a mixture with other active compounds, such as insecticides, attractants, sterilizing agents, bactericides, acaricides, nematicides, fungicides, growth-regulating substances, herbicides, safeners, fertilizers or semiochemicals.

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■ ■ ■

In an embodiment of the invention, the invention is directed to the use of the combination, mixture or composition according to the invention for controlling pests which occur in rice, cotton, tea, vegetables, sugar cane, soybean, potato, top fruits, corn, vine, ornamentals, rangeland and pastures, canola.

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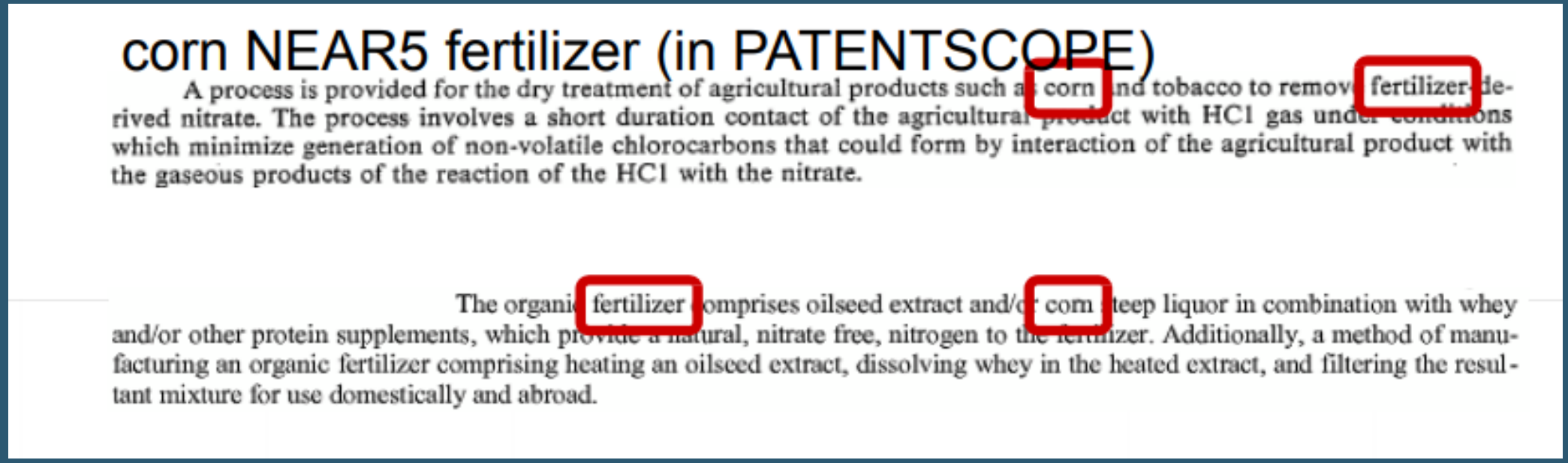
Proximity Operators

- **NEAR**

concrete NEAR building	- **concrete building** - **building** made of **concrete** - **building** containing elements made of **concrete** *NOT : **building** construction being made of certain elements containing **concrete***

Proximity Operators

- **Unordered NEAR**
- **Corn NEAR5 fertilizer**



Proximity Operators

- **Ordered NEAR**
- **Corn BEFORE5 fertilizer**

corn BEFORE5 fertilizer (in PATENTSCOPE)

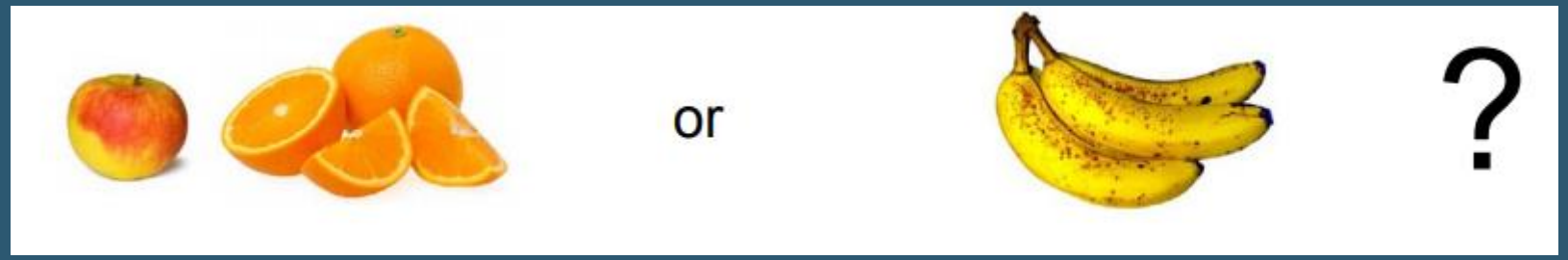
A process is provided for the dry treatment of agricultural products such as corn and tobacco to remove fertilizer-derived nitrate. The process involves a short duration contact of the agricultural product with HCl gas under conditions which minimize generation of non-volatile chlorocarbons that could form by interaction of the agricultural product with the gaseous products of the reaction of the HCl with the nitrate.

Truncation ? *

- te?t = test or text
- electric* = electrical; electricity
- behavi*r = behaviour or behaviour
- micro?p* = microspeaker, microsporidial

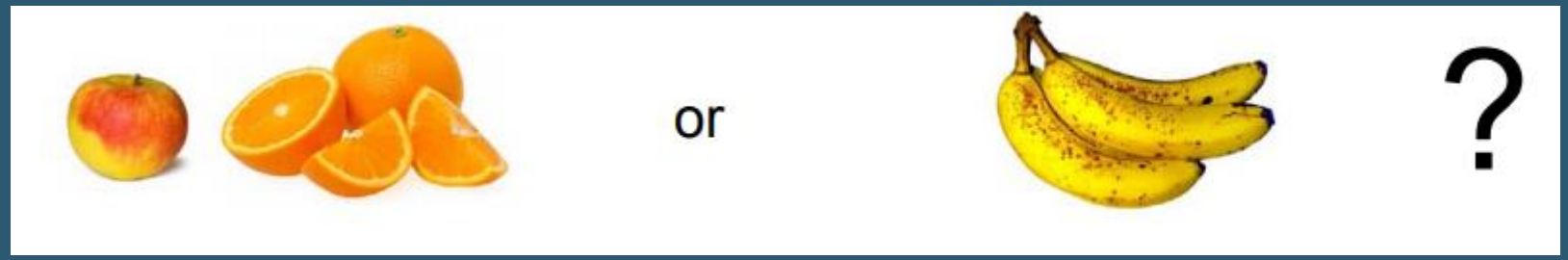
Nesting

- **Apples AND oranges OR Bananas**

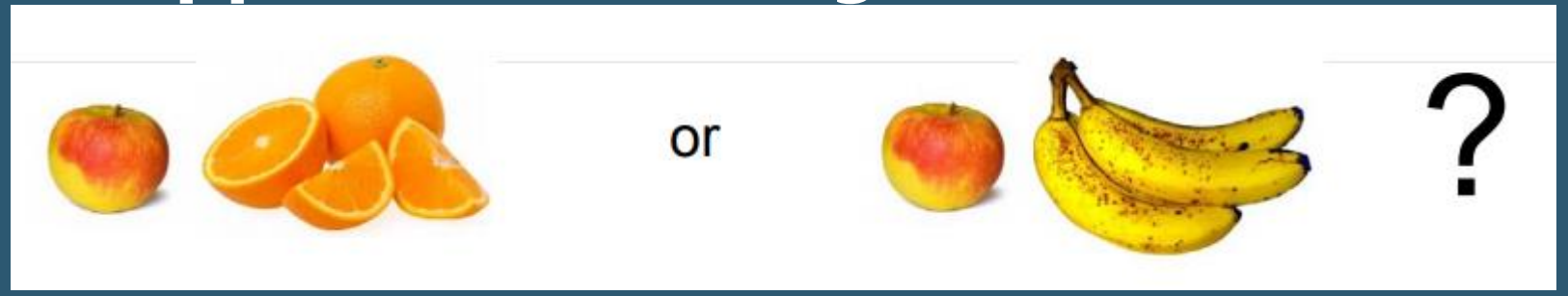


Nesting

- (Apples AND Oranges) OR Bananas



- Apples AND (Orange OR Bananas)



Know your document

BIBLIOGRAPHIC INFORMATION

PATENT SEARCH

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Van Heerden et al.

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(54) **PHARMACEUTICAL COMPOSITIONS HAVING APPETITE SUPPRESSANT ACTIVITY**

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Related U.S. Application Data

(60) Continuation of application No. 10/073,357, filed on Feb. 13, 2002, now abandoned, which is a division of application No. 09/402,962, filed on Oct. 13, 1999, now Pat. No. 6,376,657, filed as 371 of international application No. PCT/GB98/01100, filed on Apr. 15, 1998.

(30) **Foreign Application Priority Data**

Apr. 15, 1997 (ZA)..... 97/3201

Publication Classification

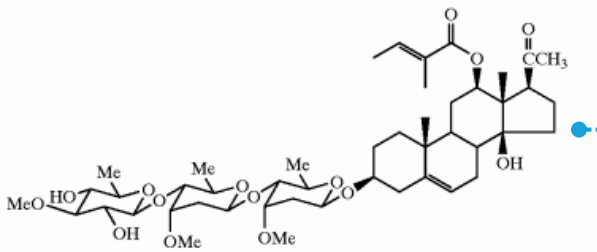
(51) **Int. Cl.**[7] **A61K 35/78**

(52) **U.S. Cl.** **424/769**

(57) **ABSTRACT**

A pharmaceutical composition contains an extract obtainable from a plant of the genus *Trichocaulon* or *Hoodia* containing an appetite suppressant agent having the formula (1). A process for obtaining the extract and a process for synthesizing compound (1) and its analogues and derivatives is also provided. The invention also extends to the use of such extracts and compound (1) and its analogues for the manufacture of medicaments having appetite suppressant activity. The invention further provides novel intermediates for the synthesis of compound (1).

(1)



Publication Number

Publication Date

International Classification No

Abstract

Drawing

Title

Inventors

Applicant

Application Date

Priority Data

Background

State of the Art

Problems that the invention solves

Summary description of the invention

PHARMACEUTICAL COMPOSITIONS HAVING APPETITE SUPPRESSANT ACTIVITY

[0001] THIS INVENTION relates to steroidal glycosides, to compositions containing such steroidal glycosides and to a new use for these steroidal glycosides and the compositions containing them. The invention further relates to a method of extracting and isolating these steroidal glycosides from plant material, to a method of synthetically producing these steroidal glycosides, and to the products of such an extraction and such a synthesis process.

[0002] In a particular application, the invention relates to an appetite suppressant agent, to a process for synthetically producing the appetite suppressant agent, to a process for extracting the appetite suppressant agent from plant material, to an appetite suppressant composition containing the appetite suppressant agent, and to a method of suppressing an appetite.

[0003] According to the invention, there is provided a process for preparing an extract of a plant of the genus *Trichocaulon* or of the genus *Hoodia*, the extract comprising an appetite suppressant agent, the process including the steps of treating collected plant material with a solvent to extract a fraction having appetite suppressant activity, separating the extraction solution from the rest of the plant material, removing the solvent from the extraction solution and recovering the extract. The extract so recovered may be further purified, eg by way of suitable solvent extraction procedures.

[0004] The invention also provides a plant extract made of plants of the group comprising the genus *Trichocaulon* and the genus *Hoodia* and having appetite suppressant activity.

[0005] The extract may be prepared from plant material such as the stems and roots of said plants of the genus *Trichocaulon* or of the genus *Hoodia*. The genus *Trichocaulon* and the genus *Hoodia* include succulent plants growing in arid regions such as are found in Southern Africa. In one application of the invention, the active appetite suppressant extract is obtained from the species *Trichocaulon piliferum*. The species *Trichocaulon officinale* may also be used to provide an active appetite suppressant extract. In another application of the invention, the active appetite suppressant extract may be obtained from the species *Hoodia currorii, Hoodia gordonii* or *Hoodia lugardii*. Bioassays conducted by the Applicant on rats have indicated that certain of the extracts possess appetite suppressant activity.

[0006] The plant material may be homogenised in the presence of a suitable solvent, for example, a methanol/methylene chloride solvent, by means of a device such as a Waring blender. The extraction solution may then be separated from the residual plant material by an appropriate separation procedure such as, for example, filtration or centrifugation. The solvent may be removed by means of the rotary evaporator, preferably in a water bath at a temperature of 60° C. The separated crude extract may then be further extracted with methylene chloride and water before being separated into a methylene chloride extract and a water extract. The methylene chloride extract may have the solvent removed preferably by means of evaporation on a rotary evaporator and the resultant extract may be further purified by way of a methanol/hexane extraction. The methanol/hexane extraction product may then be separated to yield a methanol extract and a hexane extract. The methanol extract may be evaporated to remove the solvent in order to yield a partially purified active extract.

[0007] The partially purified active extract may be dissolved in methanol, and may be further fractionated by column chromatography, employing silica gel as an adsorption medium and a chloroform/30methanol mixture as an eluent. A plurality of different fractions may be obtained, and each may be evaluated, by suitable bioassaying procedures, to determine the appetite suppressant activity thereof.

[0008] A fraction having appetite suppressant activity may preferably be further fractionated such as by column chromatography using silica gel as an adsorption medium and a 9:1 chloroform:methanol solvent, and the resultant sub-fractions bioassayed for their appetite suppressant activity. A sub-fraction displaying appetite suppressant activity may, if desired, be further fractionated and purified, conveniently using a column chromatographic procedure with silica gel as the adsorption medium and a 9:1 ethylacetate:hexane solvent. The resultant purified is fractions may again be evaluated by suitable bioassay procedures for their appetite suppressant activity.

[0009] The Applicant has found that at least one such purified fraction has good appetite suppressant activity, and the active principle in the fraction was identified by conventional chemical techniques including nuclear magnetic resonance, and was found to be a compound of the structural formula

CLAIMS

PATENT SEARCH

Numbered sentence usually found in the end of patent specification

Define the monopoly of the invention

Day 13	46	NPL			
	47	NPL	C1+		
	48			MLC	FHS1+
GROUP 9 CONTROL: ELGA OPTION 4 PURIFIED WATER					
GROUP 9: Control: Elga option 4 purified water					
Day 7	49	NPL			
	50	NPL			
	51				FHS1+
Day 13	52				DHS1+
	63	NPL			
	54				FHS1+

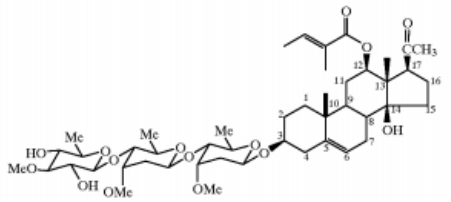
Legend:
C = Congestion
DHS = Diffuse hydropic cell swelling
FHS = Focal hydropic cell swelling
NPL = No parenchymal fesions
MLC = Minimal lymphocytic cuffing
1+ = mild
2+ = moderate
3+ = severe

No specific lesions were recorded in the liver sections from the experimental rats which received the frozen sap as well as the spray-dried sap that could be attributed to the oral adminstration of the abovementioned chemicals. The hydropic cell swelling recorded in both control and experimental

What is claimed is:

1. An extract obtainable from a plant of the genus Trichocaulon or of the genus Hoodia which comprises an appetite suppressant agent having the formula

(1)



2. An extract as claimed in claim **2** wherein the plant of the genus Trichocaulon is selected from the species *Trichocaulon piliferum* and *Trichocaulon officinale* and the plant of the genus Hoodia is selected from the species *Hoodia curroii, Hoodia gordonii* and *Hoodia lugardii*.

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3. An extract as claimed in claim **2** wherein substantially all the non-active impurities have been removed.

4. An extract as claimed in claim **1** which has been processed to a free-flowing powder.

5. A composition having appetite suppressant activity comprising the extract as claimed in claim **1**.

6. A composition as claimed in claim **5** when admixed with a pharmaceutical excipient, diluent or carrier.

7. A composition as claimed in claim **5**, which is prepared in unit dosage form.

8. The use of an extract as claimed in claim **1** in the manufacture of a medicament having appetite suppressant activity.

9. An extract as claimed in claim **1** for use as a medicament having appetite suppressant activity.

10. A method of combating obesity in a human or animal comprising administering to said human or animal an obesity combating amount of an extract as claimed in claim **1**.

11. A compound having the structural formula:

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i) coupling a selectively protected cymarose moiety of formula (40) and compound (45) using tin (II) chloride, AgOTf, Cp_2ZrCl_2 to produce a compound of the formula

(57)