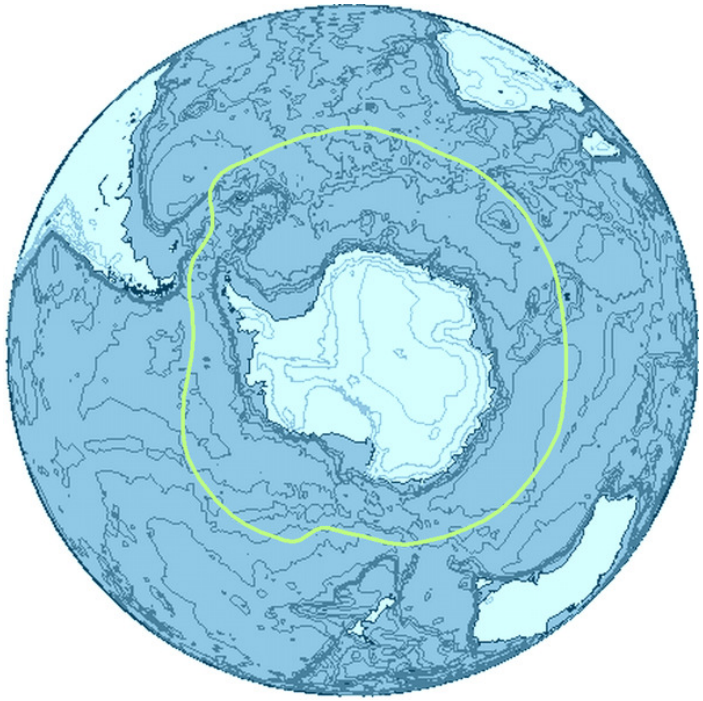
Patents and natural ingredients

Geneva, 21 January 2010

Asha Sukhwani

Case study

The Antarctic



MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

OEPM

Plants in the Antartic

- ¿How many plants grow in the Antartic?
- Can they resist 24 hours under the sun during the summer? (January)
- Can they resist the freezing cold in winter?
- If the answer is “yes”
- Are these plants useful for mankind?

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

OEPM

Plants in Antarctica

- **<u>The vascular plants</u> :**

  1. Antharctic hair grass, scientific name *Deschampsia antarctica*, and

  2. Antarctic pearwort, *Calabanthus quitensis*.

- **Bryophytes were particular susceptible to UVB radiation than higher plants.**

[3] Cátedra de Fármaco botánica, Facultad de Farmacia y Bioquímica. Universidad de Buenc
Aires, Junín 956, (1113) Buenos Aires, Argentina. mlwagner@ffyb.uba.ar

Keywords:*Deschampsia antarctica;* phylogenetics; 5.8S.; ITS sequence; Poaceae; Avenea
Palabras clave: *Deschampsia antartica;* Filogenética; 5.8S.; Secuencias de ITS; Poace
Aveneae.

D. Antarctica E. Desv.; the only monocot in the Antarctic botanical zone, was collecte in February 2000 from the Antarctic Peninsula (Jubany Argentine Scientific Station). The ai of this work is to provide sequence data to clarify the evolutionary relationship of *Deschampsia antarctica* through ITS 1, 5.8S gene and ITS 2 sequences within the Poaceae family and determine the phylogenetic position of the genus *Deschampsia*.

We evaluate the phylogenetic relationships of *Deschampsia antarctica* with other grasses via direct character optimisation using parsimony as optimaly criterion. The entire Internal transcribed spacers (ITS1 and ITS2) and 5.8S subunit of nuclear ribosomal DNA were included in the analysis. A total of 43 species were analyzed including seven species of *Deschampsia*. *D. antarctica* form a well supported group with five of these species. However *D. flexuosa* (L.) Trin. do not form part of this clade, so *Deschampsia* do not appears as a monophyletic taxa. The clade to which *D. antarctica* belongs appears as a sister group of some Aveneae along all conditions evaluated. As far as we know is one of

European Patent Office

English Deutsch Français Help index ?

esp@cenet 1998–2008

Compact | Print | Export Refine search

RESULT LIST

4 results found in the Worldwide database for:
Deschampsia antarctica in the title or abstract
(Results are sorted by date of upload in database)

The result is not what you expected? Get **assistance**

4 results for Deschampsia antarctica

1 **Novel plant gene and uses thereof** in my patents list

Inventor: GIDEKEL MANUEL [CL] ; GUTIERREZ ANA [CL] (+4)
EC: C12N9/20; A61K8/66; (+2)
Applicant: UNIV DE CONCEPCION
IPC: ***C02F1/68;*** *C02F101/00;* **C02F1/68**
Publication info: **US2009107914 (A1)** — 2009-04-30

2 **NEW EXTRACTS OF DESCHAMPSIA ANTARCTICA DESV. WITH ANTINEOPLASTIC ACTIVITY** in my patents list

Inventor: GIDEKEL MANUEL [CL] ; WEBER HELGA [CL] (+8)
EC: A61K36/899
Applicant: GIDEKEL MANUEL [CL] ; WEBER HELGA [CL] (+8)
IPC: ***A01N65/00; C07H21/04;*** **A01N65/00**; (+1)
Publication info: **WO2009064480 (A1)** — 2009-05-22

3 **BIOFERTILIZER FORMULATION** in my patents list

Inventor: GIDEKEL MANUEL [CL] ; GUTIERREZ ANA [CL] (+4)
EC: C12R1/06; C05F11/08; (+2)
Applicant: GIDEKEL MANUEL [CL] ; GUTIERREZ ANA [CL] (+4)
IPC: ***C12N1/20;*** **C12N1/20**
Publication info: **WO2008130701 (A1)** — 2008-10-30

4 **Novel plant promoter** in my patents list

Inventor: GIDEKEL MANUEL [CL] ; GUTIERREZ ANA [CL] (+4)
EC: C07K14/415; C12N15/82B24; (+1)
Applicant:
IPC: ***A01H1/00; C07H21/04; C07K14/415;*** (+9)
Publication info: **US2007118922 (A1)** — 2007-05-24

Data supplied from the ***esp@cenet*** database — Worldwide

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

OEPM

Publication in Journals

- **Protective effects of extracts from Antarctic plants against ultraviolet radiation**
- **Since these species growing in its natural habitat managed to survive this mayor increase in ratiation it has to be well adapted to UVB.**
- **Studies on the protective effect of the methanolic extract.**

Journal of Photochemistry and Photobiology B: Biology, 2009.
Vol. 96, nº 2, pages 117 - 129

Research on
Deschampsia antarctica

- **Genetic Research: Genetic resource**

  Locate four genes that resist the cold weather

  Easy to locate the genes: go to the gene level

- **Biological Research: Biological resource**

  Biological extract full of antioxidant that resist the Ultraviolet radiation of hot summer

  Difficult to locate all the antioxidants: stay at the biological level

Biological / Genetic research

Research stages:

1. **From collected sample prepare the biological extract**
2. **Locate natural compounds in the biological extract: active principles**
3. **Locate the genes codifiying the compounds:**

Extract → **Compound** → **Genes**

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

Oficina Española
de Patentes y Marcas

Definiciones / Definitions

- Recurso Biológico / Recurso Genético
- Biological Resource / Genetic Resource

BIOLOGICAL RESOURCES

- ***"Biological resources"*** **includes genetic resources, organisms or parts thereof, populations, o any other biotic component of ecosystems with actual or potential use or value for humanity (Art. 2 CBD)**

GENETIC RESOURCES (CBD)

- "*Genetic resources*" means genetic material of actual or potential value

- "*Genetic material*" means any material of plant, animal, microbial or other origin containing funtional units of heredity

Biological / Genetic research

Research stages:

1. **From collected sample prepare the biological extract**: **Biological resource**

2. **Locate natural compounds in the biological extract**: **Derivative(s)**

3. **Locate the genes codifying the compounds:** **Genetic resource**

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

OEPM

Patents on species

- **Biotechnology**
  - Genetic engineering: genes, nucleotide sequences, aminoacid sequences

- **Natural products**
  - Extracts: aqueous, glycolic, ethanolic, methanolic, lipidic, glycerine,
  - Extraction process, stabilized process,
  - Composition of various components with synergistic effect

Publishing Inventions .-

Descriptions of inventions are disclosed. The Official Authority (usually, the Patent Office) **PUBLISHES** these descriptions, thus increasing the society's technolgical patrimony.

Publication of patent applications (A).-

Most patent offices **publish** patent applications 18 months after filing (usually, they are known as **"A" publications**).

Any person can ask for copies of the published applications or even get them on the Internet.

Publication of Granted Patents (B).-

The application procedure then continues with the novelty and inventive step examination.

After that, the application is either **GRANTED** or **REJECTED** (usually, this process takes 3 to 4 years).

- If the application is **granted**, it is published as Patent Specification (**"B" publications**). From then onwards, legal protection applies for exclusive exploitation in those countries where protection as been requested.
- If the application is **rejected**, this second publication never appears.

As such, the technology is published before it is known whether it will be legally protected or not.

E

WIPO

WIPO/GRTKF/IC/2/15
ORIGINAL: English
DATE: December 13, 2001

WORLD INTELLECTUAL PROPERTY ORGANIZATION

GENEVA

INTERGOVERNMENTAL COMMITTEE ON INTELLECTUAL PROPERTY AND GENETIC RESOURCES, TRADITIONAL KNOWLEDGE AND FOLKLORE

Second Session

Geneva, December 10 to 14, 2001

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

Oficina Española
de Patentes y Marcas

PATENTS USING BIOLOGICAL SOURCES MATERIAL (I) AND MENTION OF THE COUNTRY OF ORIGIN IN PATENTS USING BIOLOGICAL SOURCE MATERIAL (II)

Document submitted by the Delegation of Spain

1. On December 12, 2001, the Delegation of Spain submitted to the second session of the Intergovernmental Committee, for distribution, the document UNEP/CBD/COP/4/INF.30, "Patents using biological sources material (I) and mention of the Country of Origin in Patents using Biological Source Material (II)" which formed part of the documentation distributed at the IV COP of the CBD (Bratislava, May, 1998).

2. This document is reproduced in the Annex.

United States Patent Office

3,773,931

Patented Nov. 20, 1973

3,773,931

PHARMACOLOGICALLY EFFECTIVE SUBSTANCE ISOLATED FROM *CABUCALA MADAGASCARIENSIS*

Alfred Groebel, Bad Soden, Taunus, and Ernst Lindner, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany

Filed Feb. 22, 1972, Ser. No. 227,919
Claims priority, application Germany, Feb. 22, 1971, P 21 08 366.9
Int. Cl. A61k 27/00
U.S. Cl. 424—195
3 Claims

ABSTRACT OF THE DISCLOSURE

A pharmacologically active substance and physiologically tolerable salts thereof having hypotensive properties. Said agent, which is isolated from *Cabucala madagascariensis*, melts at 87° C., corresponds to the molecular formula $C_{28}H_{56}O_{12}N_2Cl$, has a molecular weight between 780 and 800 as determined by mass spectroscopy, shows no absorption in its ultraviolet spectrum between 210 and 40 mμ, and has a specific rotation $[\alpha]_{22}^{D}$ in water of —20°.

Method of isolating said substance from *Cabucala madagascariensis*.

The present invention relates to a pharmacologically effective substance isolated from *Cabucala madagascariensis*, and to physiologically tolerable salts of said substance.

Cabucala madagascariensis is a shrub belonging to the Apocynacea family which is found in the dry regions of the western coast of Madagascar (cf. M. Pichon, "Notulae Systematicae," XIII (1948), pp. 202–203).

It is already known that *Cabucala madagascariensis*

the main part of the plant fats, waxes and sterols present. There are advantageously used hydrocarbons having 5 to 7 carbon atoms, preferably petroleum ether, pentane or hexane in the ratio of 1:2 to 1:5 parts by weight of drug to solvent.

For extracting the active substance from *Cabucala madagascariensis* aliphatic halogenated hydrocarbons having 1 to 3 carbon atoms and up to 3 halogen atoms, preferably up to 3 chlorine atoms, are used. From these extracting agents trichloro-ethylene and trichloro-ethane, especially methylene chloride and chloroform, are preferred. The extracting agents are preferably used in the ratio of 1:2 to 1:6 parts by weight of drug to extracting agent.

It is suitable to concentrate the halogenated hydrocarbon extract before extracting it with water. Extraction with water is repeated several times in order to remove all water-soluble portions from the halogenated hydrocarbon solution.

The combined aqueous extracts are then washed with the ester of a low-molecular weight carboxylic acid such as formic acid methyl ester, formic acid ethyl ester, acetic acid methyl ester, or acetic acid n-butyl ester, preferably with acetic acid ethyl ester, in order to eliminate undesired accompanying substances.

The washed aqueous extract is then dried, preferably by freeze drying. In this way the active substance is obtained in form of a brownish yellow powder. This active substance is also a subject of the present invention.

The active substance is homogeneous with regard to paper chromatography and shows an R_f value of 0.89 in the system of n-butanol (2), dimethyl formamide (1), water (1) (parts by volume). The spot shows the following reactions: Dragendorff reagent, orange; potassium hexa-iodo-platinate, violet blue; iron-III-chloride, dark blue; antimonium-III-chloride, pale blue; ninhydrin dark carmine red.

Disclosure requirements

- **EU Biotechnology Directive 1998, Recital 27:**

  „Whereas if an invention is based on **biological material** of plant or animal origin or if it uses such material, the patent application should include, where appropriate information on the geographical origin of such material, if known; whereas this is without prejudice to the processing of patent applications or the validity of rights arising from granted patents.“

WIPO/GRTKF/IC/8/11
ORIGINAL: English
DATE: May 17, 2005

WIPO

WORLD INTELLECTUAL PROPERTY ORGANIZATION
GENEVA

INTERGOVERNMENTAL COMMITTEE ON INTELLECTUAL PROPERTY AND GENETIC RESOURCES, TRADITIONAL KNOWLEDGE AND FOLKLORE

Eighth Session
Geneva, June 6 to 10, 2005

DISCLOSURE OF ORIGIN OR SOURCE OF GENETIC RESOURCES AND ASSOCIATED TRADITIONAL KNOWLEDGE IN PATENT APPLICATIONS

Document submitted by the European Community and Its Member States

JP 2006241078 (TOBINAGA K)

Base de datos W P I en EPOQUE

- (C) WPI / Thomson
AN - 2008-J58281 [56]
AP - JP20050059599 20050303
PR - JP20050059599 20050303
TI - Novel tetra-phenol substituted propanone compound, useful as wound-healing agent and cancer therapeutic agent
IW - NOVEL TETRA PHENOL SUBSTITUTE PROPANONE COMPOUND USEFUL WOUND HEAL AGENT CANCER THERAPEUTIC
IN - KOIKE T; ONODERA S; TAKANO A; TOBINAGA S
PA - (TOBI-I) TOBINAGA K
PN - ---JP2006241078--- A 20060914 DW200856
PD - 2006-09-14
ICAI- A61K31/121; A61K36/00; A61K36/18; A61P17/02; A61P35/00; A61P43/00; C07C49/84

JP 2006241078 (TOBINAGA K)

- USE :
  The compound (1) is useful in the preparation of granulation formation promoter and cancer cell apoptosis inducing agent (claimed). The compound (1) is useful as wound-healing agent, cancer therapeutic agent, etc.
- BIOTECHNOLOGY :
  Preparation: The tetra-phenol substituted propanone compound is isolated from the resin material of Draceana draco, by silica gel column chromatography and purified by pressure liquid chromatography (disclosed). Preferred Promoter: The granulation formation promoter and the apoptosis inducing agent comprises an extract of a resin material produced by Dracaena draco.
- SPECIFIC COMPOUNDS :
  The tetra-phenol substituted propanone compound of formula (1) is 1-(4-hydroxy phenyl)-3-{4-hydroxy 5-[1-(4-hydroxy 2-methoxy phenyl)propyl]-2-methoxyphenyl}-1-propanone of formula (2) (claimed).
- EXAMPLE :
  Insoluble part (KF) extracted from Daemonorops 5.5 kg was adsorbed onto a silica gel 100g, sequentially eluted using the mixed solvent of volume ratio 1:1 of mixed solvent of ethyl acetate and hexane. The

UNEP

CBD

CONVENTION ON BIOLOGICAL DIVERSITY

Distr.
GENERAL

UNEP/CBD/COP/7/INF/32
20 January 2004

ENGLISH AND SPANISH ONLY

CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY
Seventh meeting
Kuala Lumpur, 9-20 and 27 February 2004
Item 25 of the provisional agenda*

TRANSFER OF TECHNOLOGY AND TECHNOLOGY COOPERATION (ARTICLES 16 AND 18)

Patents as a source of technological information in the technology transfer process

Submission by the Government of Spain

1. At the request of the Government of Spain, the Executive Secretary is circulating herewith, for the information of participants in the seventh meeting of the Conference of the Parties to the Convention on Biological Diversity, a document on patents as a source of technological information in the technology transfer process, prepared by the Spanish Patent and Trademark Office.

3. Patents as a Source of Technological Information

3.1 THE DOUBLE OBJETIVE OF THE PATENT SYSTEM
- Protecting Inventors .-
- Publishing Inventions .-

3.2 PATENT DOCUMENTS
- The International Patent Classification .-

3.3 ADVANTAGES OF PATENT DOCUMENTS

3.4 LIMITATIONS OF PATENT PROTECTION
- Time Limitation .-
- Geographical Limitation .-

3.5 PROTECTION OF INVENTIONS IN OTHER COUNTRIES
- Priority Right .-
- Patent Family .-

3.6 PATENTS IN FORCE AND PATENTS IN THE PUBLIC DOMAIN

4. The role of Patents in Technology Transfer

Technology Transfer.-