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Aloe Vera Handbook Cultivation, Research Finding, Products, Formulations, Extraction & Processing

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Description

Aloe Vera is a semi tropical plant. It is one of the oldest known medicinal plants gifted by nature, Aloe Vera often called Miracle plant known by many names. It contains more than two hundred tonic ingredients including essential amino acids, enzymes, glucose and more. Also contains the most essential components required by the human body. It is grown wild in hedge rows in dry soil conditions and almost all parts of India. It can be grown even under constant drought conditions. Commercial cultivation and utilization of this plant with the application of technology can be of great value. There are various benefits of this plant; it is used to support the natural healing of skin that has been damaged. A common usage is to sooth sunburned skin. Aloe Vera can also be made into juices, gels, powders and is often added to products. For example it can be found in cosmetics, shampoos, lotions and many other common household Aloe Vera products. The many benefits of Aloe Vera are not fully researched as of yet. Processing of Aloe Vera gel derived from the leaf pulp of the plant, has become a big industry worldwide due to the application in the food industry. It has been utilized as a resource of functional food, especially for the preparation of health drinks which contain Aloe Vera gel and which have no laxative effects. Given the exponentially growing demand for it in the international market, it presents the finest commercial opportunity among the various medicinal plants. Also, India is among the few countries gifted with the unique geographical features essential for cultivation of Aloe Vera and other high potential medicinal plants.

Some fundamentals of this book are chemical investigations of different parts of the leaf, agro technique: Aloe Vera, economics of cultivation per hector, aloe (Aloe Vera) investment opportunity, specialty raw material market for cosmetics/toiletries,

strategy for capacity creation and marketing, influence of Aloe Vera on the glycol amino glycans in the matrix of healing dermal wounds in rats, effects of low molecular constituents from Aloe Vera gel on oxidative metabolism and bactericidal activities of human neutrophils, Aloe Vera & aids research, anti diabetic activity of aloes: preliminary, aloe reduction in ulcers, erosions & hemorrhages, extraction process, processing steps, extraction process of aloe gel and powder etc. This book highlights such technical details to guide and encourage new entrepreneurs. It is very useful book for consultants, farmers, students of Agricultural universities, libraries etc.

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Aloe-emodin effects on arylamine N-acetyltransferase activity in the bacterium *Helicobacter pylori*.

Influence of aloe vera on the healing of dermal wounds in diabetic rats.

Influence of Aloe vera on the glycosaminoglycans in the matrix of healing dermal wounds in rats.

Immunochemical distinction of Aloe vera, *A. arborescens*, and *A. chinensis* gels.

Aloe barbadensis extracts reduce the production of interleukin-10 after exposure to ultraviolet radiation.

Influence of Aloe vera on collagen characteristics in healing dermal wounds in rats.

Influence of Aloe vera on collagen turnover in healing of dermal wounds in rats.

Studies of aloe. VI. Cathartic effect of isobarbaloin.

[The action of an aqueous extract of Aloe barbadensis Miller in an in-vitro culture of *Trichomonas vaginalis*].

Biotherapy with the pineal immunomodulating hormone melatonin versus melatonin plus aloe vera in untreatable advanced solid neoplasms.

Nitro chemopreventive effects of plant polysaccharides (Aloe barbadensis Miller, *Lentinus edodes*, *Ganoderma lucidum* and *Coriolus versicolor*).

The therapeutic potential of Aloe Vera in tumor-bearing rats.

In vitro angiogenic activity of Aloe vera gel on calf pulmonary artery endothelial (CPAE) cells

Isolation of cDNA for an NADP-malic enzyme from Aloe arborescens

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Acceleration of the alcohol oxidation rate in rats with aloin, a quinone derivative of Aloe.

Activation of a mouse macrophage cell line by acemannan: the major carbohydrate fraction from Aloe vera gel.

Isolation of a cDNA for a phosphoenolpyruvate carboxylase from a monocot CAM-plant, Aloe arborescens: structure and its gene expression.

A purgative action of barbaloin is induced by Eubacterium sp. strain BAR, a human intestinal anaerobe, capable of transforming barbaloin to aloe-emodin anthrone.

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Prevention of ultraviolet radiation-induced suppression of contact and delayed hypersensitivity by Aloe barbadensis gel extract.

Rhein and aloe-emodin kinetics from senna laxatives in man.

Pharmacokinetic and metabolic studies with ¹⁴C-aloe emodin after oral administration to male and female rats.

Some pharmacological actions of aloe extracts and Cassia abbreviata on rats and mice.

Effects of low molecular constituents from Aloe vera gel on oxidative metabolism and cytotoxic and bactericidal activities of human neutrophils

Studies of aloe. III. Mechanism of cathartic effect.

An anti-complementary polysaccharide with immunological adjuvant activity from the leaf parenchyma gel of Aloe vera.

[Effects of aloe extracts, aloctin A, on gastric secretion and on experimental gastric lesions in rats].

Effect of water extracts of aloe and some herbs

in decreasing blood ethanol concentration in rats.

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Comparative evaluation of aloe vera in the management of burn wounds in guinea pigs.

The glucomannan system from Aloe vahombe (liliaceae).

The Aloe vera phenomenon: a review of the properties and modern uses of the leaf parenchyma gel

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Experimental & clinical observations on frostbite

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Anti-inflammatory and wound healing activity of a growth substance in Aloe vera.

Anti-inflammatory & wound healing properties of Aloe vera

Effects of topical medications on the healing of open pad wounds in dogs

Antiinflammatory activity of extracts from Aloe vera gel.

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Aloe Vera Gel Toothpaste

Aloe in Dentistry

Why Aloe may work

Use of Whole-Leaf Aloe

8. Patent

U.S. Patent 6, 027, 728 (2000)

Herbal Skin regeneration and method

A method for skin regeneration comprising

Description

Background of the Invention

Summary of the Invention

Detailed Description of the Invention

U.S. Pat. 6, 030, 622

Herbal Extract composition and method
(2000) with immune boosting capability

Background of the Invention

Field of the Invention

Description of the Background Art

Summary of the Invention

Detailed Description of the Preferred Embodiments

Extract Preparation

Preparation of Extract of ARUM ALOE

Preparation of Extract of POMEGRANATE.

Preparation of Extract of TEA.

Preparation of Extract of HIBISCUS.

Preparation of Combined Extracts of ARUM and POMEGRANATE

Preparation of Combined Extracts of ARUM, POMEGRANATE, TEA and HIBISCUS

In Vitro Blast Transformation of Lymphocytes

From Normal Patients

In Vitro Blastogenesis of Peripheral Blood Lymphocytes from Patients With Renal Failure

Stimulation of Cytokine Production in

Normal Persons

In Vitro Inhibition of gp 120 Binding to MT-4 Cells Measured with OKT4A Monoclonal Antibody.

In Vitro Inhibition of gp 120 Binding to MT-4 Cells Measured with Anti-gp 120 Monoclonal Antibody.

Chemical Analysis of Combined Extracts

Aloe vera gel toothpaste

United States Patent 5, 294, 434 March 15, 1994

Summary of Invention

Detailed Description

United States Patent 5,989,560

November 23, 1999

Herbal intestinal tract cleanser

Field of the Invention

Background of the Invention

Summary of the Invention

Detailed Description of the Preferred Embodiments

Aloe vera ointment

United States Patent 4,725,438 February 16, 1988

Field of the Invention

Background of the Invention

Summary of the Invention

Objects of the Invention

Description of the Preferred Embodiment

Summary of the Achievements of the Objects
of the Invention

United States Patent 5,288,492 February 22, 1994

Decongestant composition containing aloe vera

Background of the Invention

Field of the Invention

Description of the Prior Art

Summary of the Invention

Detailed Description of the Invention

United States Patent: 6,004,558

Technical Field

Background of the Invention

Summary of the Invention

Detailed Description of the Invention

Separation of primary isoflavones using
chromatographic techniques

Method for extraction and removal of genistein,
daidzein, formononetin and biochanin

Anti-cancer activity of isoflavone free cell extracts

Treatment of a sixty two year old male diagnosed
with prostate cancer

Herbal Remedies

Summary of the Invention

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Detailed Description of a Preferred Embodiment

Herbs and Preparation of Formulations

Patient Selection

Herbal Preparation and Dosage

Results of the Study

Effect of Discontinuing Usage of the Present Invention

Conclusion

United States Patent 5,904,924 May 18, 1999

Green nutritional powder composition

Summary of the Invention

Detailed Description of the Present Invention

U.. Pat. 5,876,728 (1999)

National Composition extracted from Plants
used in the treatment of Cancer

Background of the Invention

Objectives of the Invention

Summary of the Invention

Detailed Description of the Invention

Test Substances

Cell Culture

Cytotoxicity Assay

Fresh Tumor Specimens

Turmeric & Aloe Vera for treating health ailments

Summary of the Invention

U.S. Pat. 4591, 387 (1986)

Aloe Vera Leaf Processor

Brief Description of the Invention

Detailed Description of the Invention

U.S. Pat. 5, 215, 760 (1993)

Detailed Description of the Preferred Embodiments

U.S. Pat. 4,309,180 (1983)

Cosmetic facial preparation containing aloe vera

Detailed Description of the Preferred Embodiment

U.S. Pat. 6,013, 259 (2000)

Aloe Vera Ophthalmic Solution

Background of the Invention

Brief Summary of the Invention

Detailed Description of the Invention

Allantoin

Extract of Lavender

Topical Compositions

Pharmaceutical/Cosmetic Compositions

Cleaning Compositions

Weighing

Washing

Filleting

Grinding

Homogenization

pH Adjustment

Selective Precipitation

Centrifugation

Weighing/Storage

Tray loading
Drying
Milling
Blending
Storage and Exportation
Moderate or Medium Filtration
(Filtration Using A Medium Filter)
Fine Filtration (Filtration Using A Fine Filter)
Ultrafiltration/Concentration
Ultracentrifugation
Low Speed Centrifugation
Dialysis
Anion Exchange Chromatography
Size Exclusion Chromatography
Step-Wise Filtration
Preparation of Bulk Pharmaceutical
Mannan (â€œBPMâ€)
Pilot Scale Sizing of Bulk Pharmaceutical
Mannans by Ultra-filtration
Purification and Depyrogenation of FBA using
Chromatography with subsequent Molecular
Sizing (DFBA)
Anti Viral Effects of Different Factors Obtained by
Chromatographic Separation of FBA
Cells and Culture media:
Reagents and Preparation:
Protocol of Mouse Pulmonary Inflammation
Model
Myeloperoxidase (â€œMPOâ€) Assessment of Lavage
Fluid and Tissues
Lavage Fluid
Tissue MPO Assessment
MPO Reaction
Mouse Croton Oil Ear Inflammation Model
Protocol for Cytokine Analysis from Macrophages
Mouse TNF-.alpha. Assay In Biological Fluids
Centrifugation of Suspension of Results Obtained
from Bioassays used to Evaluate Different Factors
Results from Factors using Methods as Described
IL-6 Production:

IL- 1 .alpha. Productions:

Microparticulate Factor From FBA and No Production

Macrophage Activation and Anti-inflammatory
Activities

Epitheleal Cells (â€œECâ€) Proliferation

IL-6 Assay

RAW Cells Secreted Interleukin-6 in Response
to FBA

â€œMFâ€ Stimulated IL-6 Production

Anti-Inflammatory Activities of â€œSoluble Factorsâ€

Filtration with 0.1 .mu.m Filters of â€œMicroparticle
Factorsâ€

Factors of FBA Sized Filtration through Syringe
Filters of Various Pore Sizes

Carbohydrate Content in the Filtrate

Factors Sized and Isolated by 5 .mu.m Filtration
and No Assay

Topical Anti-Inflammatory Activity of Freeze-
Dried Aloe Vera Extract and FBA

Other Related Applications

Summary of the Present Invention

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Administration

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Sufuf Dama

Hab Hiltit

Hab Soranjan

Hab Shabyar

Halwa-i-ghaikwar

Qurs Tankar

Kuhl-ul-jawahar

Kuhl Roshania

Kushta Abrak Safaid

Kushta Busud

Kushta Khubs-ul-hadid

Kushta Khar Mohra

Kushta Tila Kalan

Kushta Faulad

Kushta Gaodanti

Kushta Nuqra

Majun Talkh

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Propagation

Harvest

Yield

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Propagation

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Manuring

Irrigation

Weeding

Diseases and Management

Harvesting the Yield

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Timing of Leaf Harvest

Leaf Harvesting and Handling

General process outline for Herbal extract

Cleaning and size reduction:

Solvent extraction:Â

Solvent recovery

Spray dried extract

Soft extract

Phytochemicals:

Effluent treatment:

Aloe Vera Gel Process

Highlights

Guidelines for production

Process outline

Process conditions:Â

Advantages of wholeleaf cold process

Strategy for process control

Patent details

Extraction Process

Processing Steps

Extraction process of Aloe Gel and Powder

12. Patents and Know-how

Description

Background of the Invention

Brief Summary of the Invention

Detailed Description of the Invention

Preparation of the Aloe Vera gel eye drops:

Summary of the Invention

Objects of the Invention

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