ORGANIC HERB INC
NATURAL INGREDIENT SOLUTIONS
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OHI
NATURAL INGREDIENT SOLUTIONS

- **Latin Name: Sophora flavescens**
- **Active Ingredient: matrine, oxymatrine**
- **CAS No.:**
- **Test method: TLC**
- **Specifications: 10:1**

Product Description:

Name :Sophora Root Extract

Source: Sophora

Botanical Name : Sophora flavescens

Extract part: Root

Composition ratio:10:1

Appearance: Fine white powder

Country of origin:P.R. China

Source

Sophora flavescens,a herbaceous plant in the Fabaceae family ,also called shrubby sophora.The root commonly known as Ku Shen have a long history of use in traditional Chinese medicines as a typical Chinese herbal medicine.

The dried roots of Sophora flavescens (Chinese name “Kushen”)have various effects like anti-oxidant, anti-inflammation, anti-bacterial, antidote,apoptosis modulator properties and anti-tumor activities .They were used traditionally for asthma, sores, gastrointestinal hemorrhage, allergy and inflammation and is used for the treatment of diarrhoea, gastrointestinal haemorrhage and eczema .

Main bio-actives

There are A variety of chemical compounds have been isolated from Sophora flavescens and it is especially rich in flavonoid and alkaloids

Brazilian Journal of Pharmacognosy reviewed the rapidly increased information on active components of Sophora flavescens and reported to posses various pharmacological/therapeutic properties, ,in particular Sophora alkaloids have been found to be their chief active chemical constituents including matrine, oxymatrine.

Matrine possesses strong antitumor activities in vitro and in vivo,its also been found biochemical activities including :anti-oxidant, anti-inflammation and apoptosis modulator properties.

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Pharmacological Functions

Anticancer

Root extract of S. flavescens shown anti-proliferative effect on cultured HaCaT cells (Tse et al., 2006). Traditionally, Chinese herbal medicine has been extensively used to treat psoriasis and produced promising clinical results. However, its underlying mechanisms of action have not been systematically investigated. Treatment with ethanolic extract of seeds of Sophora moorcroftiana at a dose of 800 mg/kg/d has a marked inhibiting effect on S180 sarcoma development in mice in-vivo (Xingming et al., 2009a). Ethanolic extracts

from S. moorcroftiana seeds significantly inhibited the proliferation of human stomach cancer cells and its activity was in dose- as well as time-dependent manner (Xingming et al., 2009b); Root extract of Sophora japonica inhibit the proliferation Hep G2 cells (Bassem et al., 2009).

Antioxidant effects

In recent years, there is a tremendous interest in the possible role of nutrition in prevention of disease. In this context, antioxidants especially derived from

natural sources such as Chinese medicinal plants, Indian medicinal plants and herbal drugs derived from them require special attention. Antioxidants neutralize the toxic and 'volatile' free radicals. Antioxidants have many potential applications, especially in relation to human health, both in terms of prevention of disease and therapy. Cellular damage induced by oxidative stress has been implicated in the etiology of a large number (>100)

of human diseases as well as the process of ageing. Anti-HBV and anti-entroviruses activity was reported (Ding & Chen 2006; Gao et al., 2006); It also suppressed the proliferation of hl-60 cells (Ding & Chen 2007); The roots of S. tonkinensis contain alkaloids that possess broad biological activities, for example-(-) 14- β-hydroxyoxymatrine, (+)-sophoranol and (-)-cytisine showed anti-HBV activity (Ding et al., 2006).

Promotes hair growth

Researches shows amount many natural extracts the extract of dried root of Sophora flavescens has outstanding hair growth promoting effect.Journal of Dermatological Science showed that Sophora flavescens extract induced mRNA levels of growth factors such as IGF-1 and KGF in dermal papilla cells, suggesting that the effects of Sophora flavescens extract on hair growth may be mediated through the regulation of growth factors in dermal papilla cells. In addition, the Sophora flavescens extract revealed to possess potent inhibitory effect on the type II 5α-reductase activity. More studies showed

Sophora flavescens methanol-extract regulates the expression of growth factors and the inhibitory effect on type II 5 α-reductase, which has an important role in hair growth regulation (Roh etal., 2002).

Taken together, these results suggest that Sophora flavescens extract has hair growth promoting potential and can be used for hair growing products.

Antimicrobial activity

Sophoraflavanone G isolated from S. exigua showed strong antimicrobial activity against

methicillin resistant Staphyllococcus aureus with 3.13- 6.25 μg/mL of MIC (Sato et al., 1995);

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Kurarinone, sophoraflavanone G and kuraridin also showed strong antimicrobial activity against Staphyllococcus aureus and Streptococus mutans (Yamaki et al., 1990). Kuraridin, sophoraflavanone D and sophoraisoflavanone A has the anti microbial activity against fungi (C. albicans and S. cerevisiae), gram negative bacteria (E. coli and S. typhimurium) and gram positive bacteria S. Epidermis and S. aureus) (Sohn et al., 2004).

Antiviral activity

Anagyrine, oxymatrine, and sophoranol isolated from S. Flavescens have potent antiviral activity against respiratory syncital virus (RSV) with IC50 values of 10.4 μg/mL and SI (CC50/ IC50) values of 24.0, 12.0, and 24.0 respectively (Ma et al., 2002). But it showed less significant activity against herpes simplex virus type 1 and type 2. Quinolizidine
alkaloids from S. alopecuroides have very weak activity against HSV 1, coxsackie B2, measles, polio, semliki forest virus and vesicular stomatitis virus (Zheng et al., 1997).

Antidote

Researchers studied Sophora flavescens extract effectiveness in in prevention of toxicity and adverse effects caused by chemotherapeutic agents in 2009 by conducting a set of randomized double-blind human trails. During the trails seventy eight cancer patients who underwent chemotherapy and symptomatic treatment were randomly divided into treatment group and controlone.In treatment group patients also received Composite Sophorae Injection 20 mL a day for 20 days.The result shows the incidence rate of toxicity and adverse reactions caused by chemotherapy in the treated group was significantly lower than that in the control group,and Karnofsky score was significantly higher than that in control group.Therefore ,the scientists reported on Journal of Practical Oncology that composite Sophorae Injection can reduce the toxicity and adverse effects caused by chemotherapy medicine.

Cardiovascular protective

Study report on Phytomedicine expatiates the molecular and ionic mechanisms of matrine's protective effects on the cardiovascular system including cardiac arrhythmias.The study group investigated the antiarrhythmic effects of matrine by using ouabain to construct an arrhythmic model of cardiomyocytes. The result shows matrine significantly and dose-dependently inhibited ouabain induced cardiac arrhythmias and shorten the duration of arrhythmias in guinea pigs.
In cardiomyocytes of guinea pigs, Matrine 100 μM shortened the prolongation of APD and prevented the increase of L-type Ca2+ currents and Ca2+transients induced by ouabain. Taken together, these findings provide the first evidence that matrine possessed arrhythmogenic effect of ouabain by inhibiting of L-type Ca2+ currents and Ca2+ overload in guinea pigs.

Applications

Sophora flavescens (Chinese name "Kushen") were used traditionally for asthma, sores, gastrointestinal hemorrhage, allergy and inflammation antiulcerative effects and is used for the treatment of diarrhoea, gastrointestinal haemorrhage and eczema .
Modern researchers show Sophora flavescens root extract process bioactivities including anti-oxidant, anti-inflammation, anti-bacterial, antidote,apoptosis modulator properties and anti-tumor activities.

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--Sophora flavescens;Wikipedia, the free encyclopedia;
https://en.wikipedia.org/wiki/Sophora_flavescens
--Panthati Murali Krishna, Rao KNV,1Sandhya S, David Banji; “A review on phytochemical, ethnomedical and pharmacological studies on genus Sophora, Fabaceae”; Brazilian Journal of Pharmacognosy 2012
--Seok-Seon Roh, Chang Deok Kim, Min-Ho Lee; “The hair growth promoting effect of Sophora flavescens extract and its molecular regulation”;Journal of Dermatological Science
--ZHU Zhao-cheng,WANG Huai-zhang,YANG Feng; “Composite Sophorae Injection in prevention of toxicity and adverse effects caused by chemotherapeutic agents”;Journal of Practical Oncology 2009-06