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(https://twitter.com/home?status=rain-tree.com/plants.htm)

The Tropical Plant Database

Technical Data

Vassourinha Pictures (Plant-Images/scoparia-pic.htm)

Monograph (Vassourinha-Monograph.pdf)

Traditional Uses (vassourinha-traditional-uses.pdf)

Plant Chemicals (vassourinha-chemicals.pdf)

Tested Activities (vassourinha-activity.pdf)

References (vassourinha-references.pdf)

Free Tech Report (reports/vassourinha-tech.pdf)

Product Search

Amazon.com
Product Search (https://amzn.to/3eqsHBH)

eBay
Product Search (https://www.ebay.com/sch/i.html?_from=R40&_trksid=m570.l1313&_nkw=Scoparia+dulcis&_sacat=26395&LH_TitleDesc=0)

Google
Product Search (https://www.google.com/search?q=Vassourinha Scoparia)

External Links

Medline Abstracts (http://www.ncbi.nlm.nih.gov/pubmed?term=Scoparia%20dulcis)

PubMed FullText (http://www.ncbi.nlm.nih.gov/pmc/?term=scoparia+dulcis)

U.S. Patents (http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=0&f=S&l=50&TERM1=Scoparia&FIELD1=&co1=AND&TERM2=dulcis&FIELD2=&d=PTXT)

Phytochem DB (db/Scoparia-dulcis-phytochem.htm)

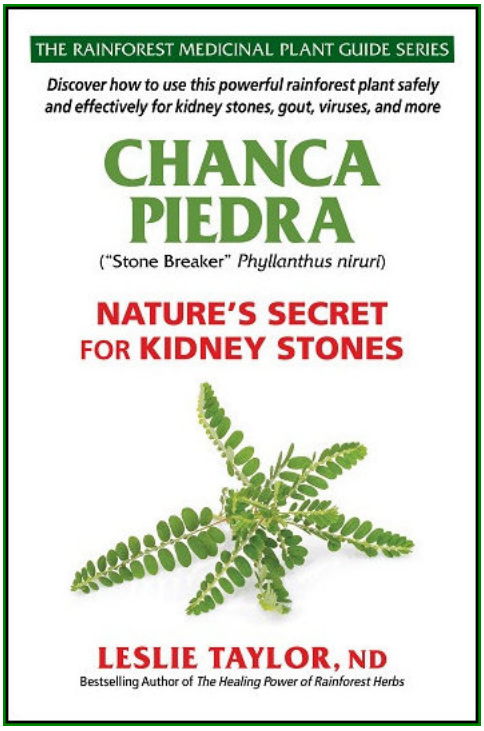
Ethnobotany DB (db/Scoparia-ethno.htm)

W³TROPICOS DB (http://www.tropicos.org/name/29200205)

GRIN DB (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?33402)

USDA DB (http://plants.usda.gov/java/profile?symbol=SCDU3)

ITIS DB (http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=34029)



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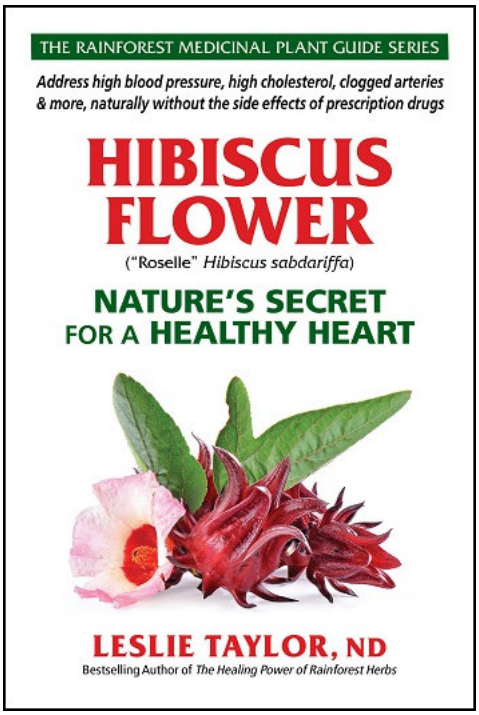

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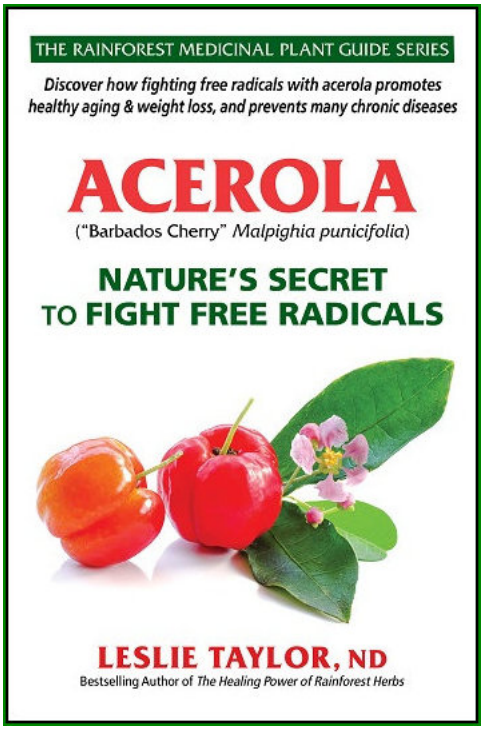

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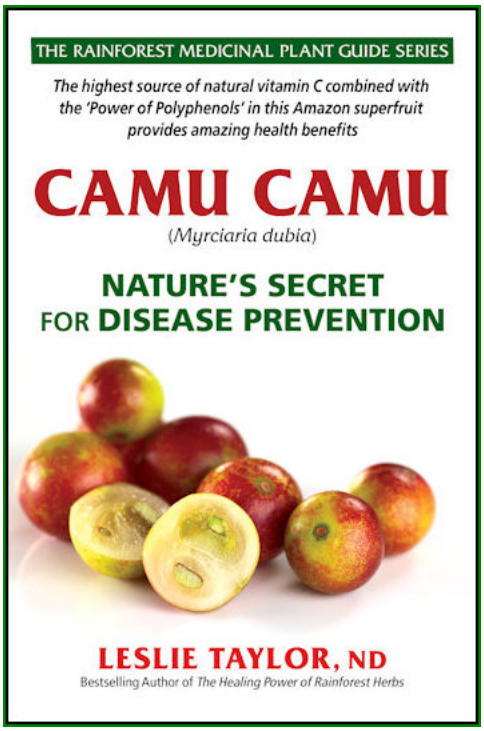

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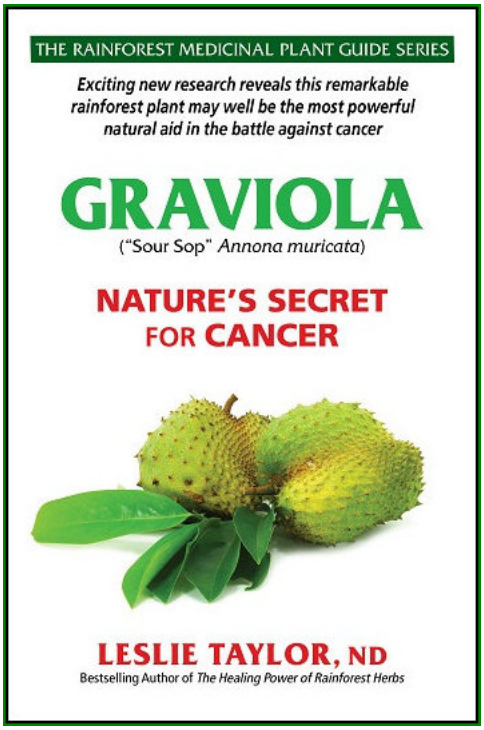

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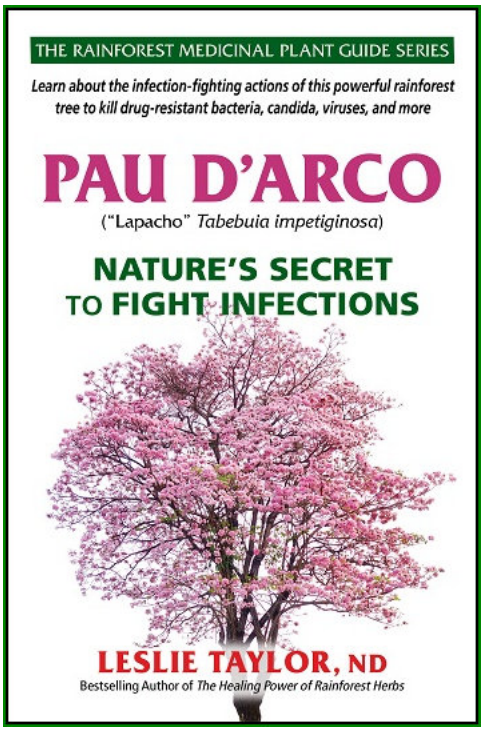

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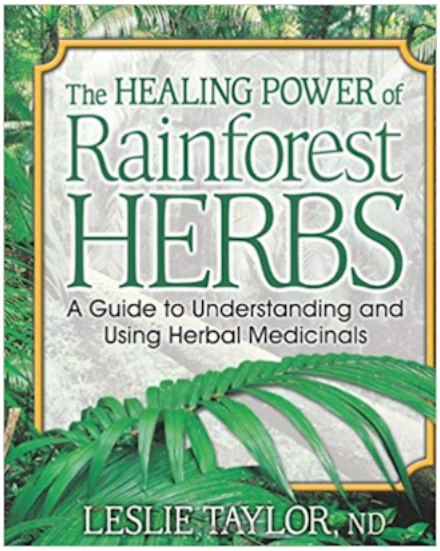

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Vassourinha

Family: Scrophulariaceae
Genus: *Scoparia*
Species: *dulcis*
Synonyms: *Scoparia grandiflora, Scoparia ternata, Capraria dulcis, Gratiola micrantha*
Common Names: Vassourinha, ñuñco pichana, anisillo, bitterbroom, boroemia, broomweed, brum sirpi, escobilla, mastuerzo, piqui pichana, pottipooli, sweet broom, tapixava, tupixaba, licorice weed
Parts Used: Leaves, bark, roots

The following text has been reprinted from: The Healing Power of Rainforest Herbs (book2.htm) © 2005 by Leslie Taylor (author.htm) .

VASSOURINHA

Herbal Properties and Actions

MAIN ACTIONS
kills viruses
kills leukemia cells
inhibits tumors
kills germs
reduces inflammation
relieves pain
reduces spasms
expels phlegm
promotes menstruation
reduces blood pressure

OTHER ACTIONS
kills bacteria
kills fungi
reduces fever
heals wounds
lowers blood sugar
lowers body temperature

STANDARD DOSAGE
Whole herb
Infusion: 1 cup twice daily
Capsules: 2-3 g twice daily

supports heart

Vassourinha is an erect annual herb in the foxglove family that grows up to 1/2 m high. It produces serrated leaves and many small, white flowers. It is widely distributed in many tropical countries in the world and is found in abundance in South America and the Amazon rainforest. It can be found as far north as the Southern United States, including Texas, Florida and Louisiana. The plant is called *escobilla* in Peru, *vassourinha* in Brazil and in here in the U.S. the plant is known as *sweet broomweed* or *licorice weed*. In many areas, the plant is considered an invasive weed.

TRIBAL AND HERBAL MEDICINE USES

Vassourinha has long held a place in herbal medicine in every tropical country where it grows, and its use by indigenous peoples is well documented. Indigenous tribes in Ecuador brew a tea of the entire plant to reduce swellings, aches, and pains. The Tikuna Indians make a decoction for washing wounds, and women drink the same decoction for three days each month during menstruation as a contraceptive and/or to induce abortions. In the rainforests of Guyana, indigenous tribes use a leaf decoction as an antiseptic wash for wounds, as an anti-nausea aid for infants, as a soothing bath to treat fever, and in poultices for migraine headaches. Indigenous peoples in Brazil use the leaf juice to wash infected wounds, and place it in the eyes for eye problems; they make an infusion of the entire plant to use as an expectorant and to soothe and soften the skin. Indigenous tribes in Nicaragua use a hot water infusion and/or decoction of vassourinha leaves (or the whole plant) for stomach pain, for menstrual disorders, as an aid in childbirth, as a blood purifier, for insect bites, fevers, heart problems, liver and stomach disorders, malaria, venereal disease, and as a general tonic.

Vassourinha is still employed in herbal medicine throughout the tropics. In Peru a decoction of the entire plant is recommended for upper respiratory problems, biliary colic or congestion, menstrual disorders, and fever; the leaf juice is still employed externally for wounds and hemorrhoids. In Brazilian herbal medicine the plant is used to reduce fever, lower blood sugar and blood pressure, and as an expectorant for coughs and lung congestion. A tea is prepared from the leaves or aerial parts of the plant for fevers and urinary tract diseases, upper respiratory disorders, bronchitis, coughs, menstrual disorders, and hypertension. The leaf juice or a decoction of the leaves is also employed topically for skin ulcers and erysipelas. In Ayurvedic herbal medicine systems in India a leaf tea is widely used for diabetes.

PLANT CHEMICALS

Chemical screening of vassourinha has shown that it is a source of novel phytochemicals in the flavone and terpene classification, some of which have not been seen in science before. Many of vassourinha's active biological properties, including its anticancerous properties, are attributed to these phytochemicals. The main chemicals being studied are scopadulcic acids A and B, scopadiol, scopadulciol, scopadulin, scoparic acids A, B, and C, and betulinic acid.

The antitumorous activity of scopadulcic acid B was demonstrated in a 1993 study, and antitumor activity against various human cancer cell lines was reported again in 2001. This chemical and another compound named *scopadulin* demonstrated antiviral properties in several studies, including against Herpes simplex I in hamsters. Betulinic acid is another phytochemical that has been the subject of much independent cancer research (beginning in the late 1990s). Many studies report that this phytochemical has powerful anticancerous, antitumorous, antileukemic, and antiviral (including HIV) properties. This potent phytochemical has displayed selective cytotoxic activity against malignant brain tumors, bone cancer, and melanomas (without harming healthy cells).

Vassourinha's main plant chemicals include: acacetin, amyrin, apigenin, benzoxazin, benzoxazolin, benzoxazolinone, betulinic acid, cirsimarin, cirsitakaoside, coixol, coumaric acid, cynaroside, daucosterol, dulcinol, dulcioic acid, friedelin, gentisic acid, glutinol, hymenoxin, ifflaionic acid, linarin, luteolin, mannitol, scopadiol, scopadulcic acid A & B, scopadulciol, scopadulin, scoparic acid A thru C, scoparinol, scutellarein, scutellarin, sitosterol, stigmasterol, taraxerol, vicenin, and vitexin.

BIOLOGICAL ACTIVITIES AND CLINICAL RESEARCH

In addition to its tested anticancerous chemicals, a methanol extract of vassourinha leaves also showed toxic actions against cancer cells (with a 66% inhibition rate) by Japanese researchers. These findings fueled more research on the chemicals in this plant and their activities that is still ongoing today.

Some of vassourinha's other uses in herbal medicine have also been validated by western research. In early research, vassourinha demonstrated a cardiotonic effect in animals. More than 40 years later, researchers reconfirmed its blood pressure lowering properties in rats and dogs (while increasing the strength of the heartbeat). It also demonstrated anti-inflammatory, antispasmodic, and pain relieving activity in animal studies with rats, mice, and guinea pigs. A single chemical called *scoparinol* was identified by scientists as being responsible for the pain relieving effects. Another researcher, in a 2001 study, again documented significant pain relieving and anti-inflammatory effects in laboratory animals - and also indicated scoparinol demonstrated

diuretic and barbiturate potentiation activity. These documented actions could certainly explain its traditional use as a natural remedy for pain of all types (including menstrual pain and cramps as well as during childbirth). In 2002, researchers in India verified vassourinha's antidiabetic and blood sugar-lowering effects in rats. In other *in vitro* laboratory tests, vassourinha demonstrated antioxidant actions, as well as, active properties against bacteria and fungi (which could explain its sustained use for respiratory and urinary tract infections).

CURRENT PRACTICAL USES

Scientists have been trying since the mid-1990s to synthesize several plant chemicals found in vassourinha, including scopadulcic acid B and betulinic acid, for their use in the pharmaceutical industry. Herbalists and natural health practitioners have used and will continue to use the plant as an effective natural remedy for upper respiratory problems and viruses, for menstrual problems, and as a natural pain reliever and antispasmodic remedy when needed. Water and ethanol extracts given to mice at up to 2 grams per kilogram of body weight showed no toxicity.

Vassourinha Plant Summary

Main Preparation Method: decoction, infusion or capsules

Main Actions (in order):

anti-inflammatory, antimicrobial, analgesic (pain-reliever), antispasmodic, anticancerous

Main Uses:

1. for menstrual problems (pain, cramps, premenstrual syndrome [PMS], to promote and normalize menstruation)
2. for upper respiratory bacterial and viral infections
3. to relieve pain of all types (arthritis, migraines and headaches, stomach aches, muscle pain, etc)
4. to tone, balance, and strengthen heart function (and for mild hypertension)
5. for venereal diseases and urinary tract infections

Properties/Actions Documented by Research:

analgesic (pain-reliever), anti-inflammatory, antitumorous, antibacterial, anticancerous, antifungal, antileukemic, antispasmodic, antiviral, cardiotonic (tones, balances, strengthens heart function), central nervous system depressant, diuretic, hypoglycemic, hypotensive (lowers blood pressure), sedative

Other Properties/Actions Documented by Traditional Use:

abortive, antimalarial, cough suppressant, antivenin, contraceptive, decongestant, detoxifier, emollient, expectorant, febrifuge (reduces fever), hepatotonic (tones, balances, strengthens the liver), insecticide, menstrual stimulant, refrigerant (lowers body temperature), tonic (tones, balances, strengthens overall body functions), vermifuge (expels worms), wound healer

Cautions: Use with caution in combination with barbiturates and antidepressants. It has hypoglycemic effects.

Traditional Preparation: The reported therapeutic dosage generally used in South America is 2-3 g twice daily or 1 cup of a standard infusion twice daily.

Contraindications:

1. The traditional use as an abortive and/or childbirth aid warrants that vassourinha should not be taken during pregnancy.
2. Avoid combining with antidepressants or barbiturates unless under the supervision of a qualified health care practitioner (see drug interactions below).
3. A vassourinha extract recently demonstrated hypoglycemic activity, significantly lowering blood sugar levels in rats. This plant is probably contraindicated in people with hypoglycemia. Diabetics monitor their blood glucose levels closely if they use vassourinha to monitor these possible effects.

Drug Interactions: One human study documented that an ethanol extract of vassourinha inhibited radioligand binding to dopamine and seratonin. Another study reported that a water extract given intragastrically to rats potentiated the effects of barbiturates. As such, it is possible that vassourinha may enhance the effect of barbiturates and selective serotonin reuptake inhibitor antidepressants.

Worldwide Ethnomedical Uses

Amazonia	for abortions, aches, bronchitis, contraception, coughs, diarrhea, erysipelas, eye infections, fever, hemorrhoids, kidney disease, liver problems, nausea, pain, sores (gonorrhea), stomach disorders, swelling, wounds

Brazil	for abortions, bronchitis, cardiopulmonary disorders, coughs, diabetes, earache, excessive phlegm, eye problems, fever, gastric disorders, hemorrhoids, hypertension, hyperglycemia, insect bites, jaundice, liver disorders, malaria, menstrual disorders, menstrual promotion, pain, upper respiratory disorders, skin problems, worms, wounds
Central America	for bruises, constipation, diarrhea, fever, flu, gonorrhea, kidney stones, liver disorders, menstrual disorders, menstrual promotion, skin infections, sore throat, stomach disease, stomach pain, wounds, and as an insecticide
Dominican Republic	for diabetes, sore throat
Haiti	for coughs, diabetes, earache, gonorrhea, headaches, inflammation, menstrual disorders, nerves, pain, piles, skin sores, sore throat, spasms, toothache, tumors, and as an antiseptic, astringent and diuretic
India	for diabetes, dysentery, earache, fever, gonorrhea, headaches, jaundice, snake bite, stomach problems, toothache, warts
Nicaragua	for anemia, childbirth, blood cleansing, burns, cough, diarrhea, fever, heart conditions, headache, infections, insect bites & stings, itch, liver disorders, malaria, menstrual disorders, snakebite, stomach disorders, venereal disease
Peru	for abortions, colic, contraception diarrhea, excessive mucus, fever, hemorrhoids, kidney diseases, menstrual disorders, upper respiratory disorders, wounds (infected)
Surinam	for bronchitis, coughs, diabetes, fever, jaundice, rash
Trinidad	for blood cleansing, diabetes, eczema, eye problems, jaundice, malabsorption, mange, menstrual disorders, rashes, sores, wounds
Venezuela	for diarrhea, gonorrhea, menstrual disorders
West Indies	for diarrhea, diabetes, menstrual disorders
Elsewhere	for abortions, aches, albuminuria, anemia, bronchitis, cancer, childbirth, cough, conjunctivitis, contraception, detoxification, diabetes, diarrhea, dysentery, earache, fever, headache, hyperglycemia, hypertension, kidney disorders, kidney stones, leprosy, liver disease, menstrual disorders, migraine, nausea, pains, retinitis, snakebite, stomachache, swellings, syphilis, toothache, venereal disease, worms, wounds, and as an antiseptic, aphrodisiac, diuretic, expectorant and laxative

Published Research on Vassourinha

All available third-party published research on vassourinha be found at **PubMed (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?dispmax=20&db=PubMed&pmfilter_EDatLimit=No+Limit&cmd_current=Limits&orig_db=PubMed&cmd=Search&term=scoparia+dulcis&doptcmdl=D**
A partial listing of the third-party published research on vassourinha updated through Feb 2019 is shown below:

Pain Relieving, Antispasmodic, Sedative, & Anti-inflammatory actions:

Bellapalli, S., et al "Betulinic acid, derived from the desert lavender Hyptis emoryi, attenuates paclitaxel-, HIV-, and nerve injury-associated peripheral sensory neuropathy via block of N- and T-type calcium channels." *Pain*. 2019 Jan; 160(1): 117-135.

Moniruzzaman, M., et al. "Evaluation of sedative and hypnotic activity of ethanolic extract of *Scoparia dulcis* Linn." *Evid. Based Complement. Alternat. Med.* 2015; 2015: 873954.

Tsai, J., et al. "Anti-inflammatory effects of *Scoparia dulcis* L. and betulinic acid." *Am. J. Chin. Med.* 2011; 39(5): 943-56.

Bangou, M., et al. "Evaluation of enzymes inhibition activities of medicinal plant from Burkina Faso." *Pak. J. Biol. Sci.* 2011 Jan; 14(2): 99-105.

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Immune Modulation Actions:

Li, N., et al. "Betulinic acid inhibits the migration and invasion of fibroblast-like synoviocytes from patients with rheumatoid arthritis." *Int. Immunopharmacol.* 2019 Feb; 67: 186-193.

Madakkannu, B., and Ravichandran, R., "*In vivo* immunoprotective role of *Indigofera tinctoria* and *Scoparia dulcis* aqueous extracts against chronic noise stress induced immune abnormalities in Wistar albino rats." *Toxicol. Rep.* 2017 Sep; 4: 484-493.

Sundareswaran, L., et al. "Effect of *Scoparia dulcis* on noise stress induced adaptive immunity and cytokine response in immunized Wistar rats." *J. Ayurveda Integr. Med.* 2017 Jan - Mar; 8(1): 13-19.

Cytotoxic & Anticancerous Actions:

Many of vassourinha's active biological properties, including its anticancerous properties, are attributed to various flavone and terpene chemicals, some only found in vassourinha.. The main chemicals being studied for their actions against cancer are scopadulcic acids A and B, scopadiol, scopadulciol, scopadulin, scoparic acids A, B, and C, and betulinic acid.

Wang, W., et al. "Betulinic acid induces apoptosis and suppresses metastasis in hepatocellular carcinoma cell lines *in vitro* and *in vivo*." *J. Cell. Mol. Med*. 2019 Jan; 23(1): 586-595

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Yang, C., et al. "Betulinic acid induces apoptosis and inhibits metastasis of human renal carcinoma cells *in vitro* and *in vivo*." *J. Cell. Biochem.* 2018 Nov; 119(10): 8611-8622.

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Antimicrobial, Antiparasitic, & Antimalarial Actions:

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One method vassourinha has to benefit diabetes is its documented α-glucosidase inhibitory effects. This action blocks the amount of dietary sugars that are broken down and absorbed in the intestines. Vassourinha has also exhibited good lipogenesis, adiponectinesis and glucose uptake stimulatory properties. One study reported it "showed significant inhibition of blood glucose level as compared to control and similar to that of standard glibenclamide." Vassourinha has also shown to be an agonist of peroxisome proliferator-activated receptor gamma which is implicated in the cause and/or progression of Metabolic Syndrome. Vassourinha's beneficial actions for treating diabetes and metabolic syndrome are attributed to various plant chemicals including scoparic acid A, scoparic acid D, scutellarein, apigenin, luteolin, coixol, betulinic acid, and glutinol. This 2016 article (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4995349/) ***has a good review of vassourinha's benefits for diabetes.***

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Take Action

"Never doubt that a small group of thoughtful committed citizens can change the world; indeed, it's the only thing that ever has."

Margret Mead

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