Bloodroot

(*Sanguinaria canadensis*)

Medical Applications (Skin Cancer &c)
Botany & Cultivation
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Medical Applications

http://www.klemow.wilkes.edu/Sanguinaria.html

Medical Attributes of Sanguinaria canadensis - Bloodroot

by Abigail Redmond

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Sanguinaria canadensis L., commonly known as bloodroot, red puccoon, Indian paint, redroot, pauson, or tetterwort, is found throughout most of North America east of the Rocky Mountains (Reed 1999). This herbaceous perennial is a member of the Papaveraceae (poppy family) (Reed 1999). It reaches a maximum of ten inches in height, has basal leaves that can be as wide as eight inches, and a white and yellow flower appearing in late winter continuing into early spring (Reed 1999). This species is found in rich woods, usually on banks or slopes (Anon 2003).

Rhizomes of Sanguinaria canadensis produce an extract that is a mixture of benzophenanthride alkaloids, most notably sanguinarine (Godowski 1989). American Indians used the rhizome in treatment of: rheumatism, asthma, bronchitis, lung ailments, laryngyitis, fevers, and warts (Anon 1995).

Alkaloid production in S. canadensis was noted to increase with decreased light intensity and fertilizer levels and decline with topographic elevation (Salmore and Hunter 2001).

S. canadensis extracts have antibiotic activity. A study conducted by Ignatov et al (1994) found that the enzyme-specific activity of S. canadensis used in defense against pathogens may depend on the presence of methyl jasmonate and acetylsalicylic acid. They found that enzyme-specific activity could be increased up to 4- to 14- fold when cultured cells were treated with methyl jasmonate and acetylsalicylic acid (Ignatov et al 1994). Therefore, less sanguinarine is needed if it is given with methyl jasmonate and acetylsalicylic acid, than if it given alone.

Antimicrobial effectiveness of extracts of S. canadensis in traditional treatment of leprosy and tuberculosis was tested using two model species of mycobacteria, Mycobacterium aurum and M. smegmatis (Newton 2001). S. canadensis was found to have significant antimycobacterial activity against M. aurum only (MIC=62.5 microg/ml) which supports the traditional uses of this plant against those diseases (Newton et al 2001).

Effects on white blood cells are also dependent on the dosage of extracts of S.canadensis. Sanguinarine extracts are not lytic to neutrophils but even at very low concentrations (0.001%) will inhibit neutrophil chemotaxis, oxidative metabolism and degranulation within 5 minutes (Agarwal et al 1997). Therefore, both the length of exposure and the dose of the drug both are critical while considering the effectiveness of the extract in the treatment of infections (Agarwal et al 1997). An in vitro analysis of fifteen strains of Helicobacter pylori, bacteria that cause common gastrointestinal upset, were growth inhibited by a methanol extract of S. canadensis, with a MIC50 range of 12.5-50.0 microg/ml (Mahady et al 2003).

Sanguinaria has been investigated as an anti cancer treatment. The activation of human myloid cells with tumor necrosis was completely suppressed by sanguinarine in a dose- and time-dependent manner (Chaturvedi et al 1997). Uterine cervical cancer treatment with 2.12 or 4.24 microM sanguinarine induced cell death in most pathogenic cells, providing first evidence that sanguinarine is effective against cervical cancer cells via cell death (Ding et al 2002). Sanguinarine showed no specificity for cancer cells in human prostatic adenocarcinoma cells, inhibiting the growth of all cells tested, suggesting clinical usefulness is limited in cancer treatment (Debiton et al 2003). Four cases in which patients had used sanguinarine extracts in lieu of the recommended conventional treatment for basal cell carcinomas showed that scarring ensued. One patient had a residual tumor, and another "healed" for several years but then had deeply recurring basal cell carcinomas (McDaniel and Goldman 2002).

The commercially marketed product Viadent mouthrinse and toothpaste both contain sanguinarine, commonly used to treat adult periodontitis. A comparison study shows that doxycycline hyclate (a synthetic) is superior to sanguinarine chloride in treatment of adult periodontitis (Drisko 1997). In a double-blind parallel study, people using sanguinaria extract oral rinse did not show improvement (Polson et al 1990). A 14-week controlled clinical trial supported the combined use of chlorhexidine mouthrinse for 2 weeks followed by sanguinaria mouthrinse and toothpaste up to three months in treating periodontitis (Tenenbaum et al 1999). The MIC of sanguinarine ranges from 1 to 32 micrograms/ml for most species of plaque (Godowski 1987). A match case-controlled study including 58 patients diagnosed with oral leukoplakia showed that Viadent product use may cause oral leukoplakia (Mascarenhas et al 2002). Based on reviews and discussions of the database on Sanguinaria extract, the Expert Panel declared Viadent products to be safe in present use (Frankos et al 1990).

Benefits of Sanguinaria canadensis extract include leprosy and tuberculosis treatment, antimicrobial treatment for the gastrointestinal system, cervical cancer and tumor treatments, and adult periodontitis treatment. Risks include a dose and time dependent treatment that is not well understood or proven, no specificity in growth inhibition of cells (normal or cancerous), and proven harm in abandoning traditional treatments in basal cell carcinomas. More research is necessary to determine whether Sanguinaria canadensis is effective as an anticancer treatment.

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AltCancerCream.com
Jennifer Wilson (Australia)
George S. Ackerson
(FDA informant)
Health.Centreforce.com

Botany & Cultivation

Wikipedia.org

Bloodroot
Sanguinaria canadensis

Scientific classification
Kingdom: Plantae
Division: Magnoliophyta
Class: Magnoliopsida
Order: Ranunculales
Family: Papaveraceae
Genus: Sanguinaria L.
Species: S. canadensis
Binomial name : Sanguinaria canadensis L.

Bloodroot, Sanguinaria canadensis, is a perennial, herbaceous flowering plant native to eastern North America from Nova Scotia, Canada southward to Florida, United States, and west to Great Lakes and down the Mississippi embayment. It is the only species in the genus Sanguinaria, included in the family Papaveraceae, and most closely related to Eomecon of eastern Asia.

Bloodroot is also known as bloodwort, red puccoon root, and sometimes pauson. Bloodroot has also been known as tetterwort in America, although that name is used in Britain to refer to Greater Celandine (Chelidonium majus). Plants are variable in leaf and flower shape and have in the past been separated out as different subspecies due to these variable shapes. Currently most taxonomic treatments lump these different forms into one highly variable species. In bloodroot, the juice is red and poisonous.[1]

Description

Sanguinaria canadensis, bloodroot, is a variable species growing from 20–50 centimetres (7.9–20 in) tall, normally with one large, sheath-like basal multi-lobed leaf up to 12 centimetres (4.7 in) across. Bloodroot stores sap in an orange colored rhizome, that grows shallowly under or at the soil surface. Over many years of growth, the branching rhizome can grow into a large colony. Plants start to bloom before the foliage unfolds in early spring and after blooming the leaves expand to their full size and go summer dormant in mid to late summer.

The flowers are produced from March to May, with 8-12 delicate white petals and yellow reproductive parts. The flowers appear over clasping leaves while blooming. The flowers are pollinated by small bees and flies, seeds develop in elongated green pods 40 to 60 mm in length and ripen before the foliage goes dormant. The seeds are round in shape and when ripe are black to

orange-red in color.

Habitat

Sanguinaria canadensis plants are found growing in moist to dry woods and thickets, often on flood plains and near shores or streams on slopes, they grow less frequently in clearings and meadows or on dunes, and are rarely found in disturbed sites. Deer will feed on the plants in early spring.

Reproduction and genetics

Bloodroot is one of many plants whose seeds are spread by ants, a process called myrmecochory. The seeds have a fleshy organ called an elaiosome that attracts ants. The ants take the seeds to their nest, where they eat the elaiosomes, and put the seeds in their nest debris, where they are protected until they germinate. They also get the added bonus of growing in a medium made richer by the ant nest debris.

Toxicity

Bloodroot produces benzylisoquinoline alkaloids, primarily the toxin sanguinarine. The alkaloids are transported to and stored in the rhizome. Comparing the biosynthesis of morphine and sanguinarine, the final intermediate in common is (S)-reticuline.[2][3] A number of plants in Papaveraceae and Ranunculaceae, as well as plants in the genus Colchicum (family Colchicaceae) and genus Chondodendron (family Menispermaceae), also produce such benzylisoquinoline alkaloids.

Plant geneticists have identified and sequenced genes which produce the enzymes required for this production. One enzyme involved is CYP80B1,[4] which produces (S)-3'-hydroxy-N-methylcoclaurine and mendococlaurine from (S)-N-methylcoclaurine.

Bloodroot flowers are produced from March to May, with 8-12 delicate white petals and yellow stamens

Bloodroot leaves grow rapidly after the flowers die and persist until late summer

Fruit or pod holding the seeds, in early summer

Double-flowered cultivars such as S. canadensis forma multiplex are popular with gardeners, as their flowers last longer than single ones

Bloodroot leaves clasped around stem in early spring while in bloom

Cultivation

Sanguinaria canadensis is cultivated as an ornamental plant. The double flowering forms are prized by gardeners for their large showy white flowers, which are produced very early in the gardening season. Bloodroot flower petals are shed within a day or two of pollination so the flower display is short lived. The double forms bloom much longer than the normal forms, the double flowers are made up of stamens that have been changed into petal looking like parts, making pollination more difficult.

Medicinal

Bloodroot was used historically by Native Americans for curative properties as an emetic, respiratory aid, and other treatments.[5]

In physician William Cook's 1869 work The Physiomedical Dispensatory is recorded a chapter on the uses and preparations of bloodroot,[6] which described tinctures and extractions, and also included at least the following cautionary report:

The U. S. Dispensatory says four persons lost their lives at Bellevue Hospital, New York, by drinking largely of blood root tincture in mistake for ardent spirits [...]

Greater Celandine (Chelidonium majus), a member of the Poppy family (Papaveraceae) was used

in Colonial America as a wart remedy. Bloodroot has been similarly applied in the past. This may explain the multiple American and British definitions of "Tetterwort" in 1913.

Bloodroot extracts have also been promoted by some supplement companies as a treatment or cure for cancer, but the U.S. Food and Drug Administration has listed some of these products among its "187 Fake Cancer 'Cures' Consumers Should Avoid".[7]

Canada puccoon by Sydenham Edwards from The Botanical Magazine (1791)

Toxicity to animal cells

Sanguinarine kills animal cells by blocking the action of Na+/K+-ATPase transmembrane proteins. As a result, applying bloodroot to the skin may destroy tissue and lead to the formation of a large scab, called an eschar. Bloodroot and its extracts are thus considered escharotic.

Internal use is inadvisable. Applying escharotic agents, including bloodroot, to the skin is sometimes suggested as a home treatment for skin cancer, these attempts can be severely disfiguring.[8] Salves derived from bloodroot cannot be relied on to remove an entire malignant tumor. Microscopic tumor deposits may remain after visible tumor tissue is burned away, and case reports have shown that in such instances tumor has recurred and/or metastasized.[9]

In 2005, "folk healer" Dan Raber (of Georgia, United States) was arrested and charged with causing severe bodily harm and practicing medicine without a license for dispensing bloodroot paste to nine women with various ailments including breast cancer, causing severe disfiguring destruction of their skin and underlying tissue (as well as failing to successfully excise their tumors). Lois March, M.D. of Cordele, Georgia, was also charged as an accomplice and had her medical license permanently revoked for her role in assisting Raber's unlicensed treatment by prescribing massive amounts of opiate pain medication to his customers in order to allow them to continue their bloodroot treatment despite the severe burning pain and disfigurement it caused.[10] [11][12]

Numerous published, pre-clinical In Vitro and In Vivo studies have demonstrated that Sanguinarine causes targeted apoptosis in human cancer cells, and recommend future development of Sanguinarine as a potential cancer treatment.[13][14][15][16][17][18]

A study conducted by the Case Western Reserve University in 2000 found that low doses of sanguinarine caused this apoptosis in cancerous human epidermoid carcinoma cells while little reaction from normal human skin cells was observed.[19]

Commercial uses

Commercial uses of sanguinarine and bloodroot extract include dental hygiene products. The United States FDA has approved the inclusion of sanguinarine in toothpastes as an antibacterial or anti-plaque agent.[20][21][22][23] Currently, it is believed that this use may cause leukoplakia, a premalignant oral lesion.[24] On 24 Nov 2003, the Colgate-Palmolive Company of Piscataway, New Jersey, United States commented by memorandum to the United States Food and Drug Administration that then-proposed rules for levels of sanguinarine in mouthwash and dental wash products were lower than necessary.[25] However, this conclusion is controversial.[26]

Some animal food additives sold and distributed in Europe such as Phytobiotics' Sangrovit contain sanguinarine and chelerythrine. On 14 May 2003, Cat Holmes reported in Georgia Faces[27] that Jim Affolter and Selima Campbell, horticulturists at the University of Georgia College of Agricultural and Environmental Sciences, were meeting with Phytobiotics to relate their research into commercial cultivation of bloodroot.

Plant dye

Bloodroot is a popular red natural dye used by Native American artists, especially among southeastern rivercane basketmakers.[28] The blood of the root (when cut open) was used as a dye. A break in the surface of the plant, especially the roots, reveals a reddish sap.

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Native Plant Database
http://www.wildflower.org/plants/result.php?id_plant=SACA13
Lady Bird Johnson Wildflower Center
4801 La Crosse Avenue, Austin, Texas 78739
512.232.0100

Sanguinaria canadensis
(Bloodroot)

Sanguinaria canadensis L.
Bloodroot
Papaveraceae (Poppy Family)
USDA Symbol: SACA13
USDA Native Status: Native to U.S.

The single bloodroot leaf and flower each rise on a separate stem, and at first the leaf completely enwraps the flower bud. The clear, white, many-petaled blossom may open before the leaf has completely unwrapped, rising slightly above the leaf to a height of 6-10 in. Leaves, which are large, round and deeply cleft, eventually reach a height of 12-14 in. On a smooth stalk a solitary white flower, with a golden-orange center, grows beside a lobed basal leaf that often curls around the stalk. Roots and stem with acrid red-orange juice.

This fragile spring flower develops and rises from the center of its curled leaf, opening in full sun, and closing at night. Like most members of the Poppy Family, it lasts for a relatively short time. The red juice from the underground stem was used by Indians as a dye for baskets, clothing, and war paint, as well as for insect repellent. The generic name, from the Latin sanguinarius, means bleeding.

Plant Characteristics

Duration: Perennial
Habit: Herb
Leaf Complexity: Simple
Flower:

Size Class: 0-1 ft.
Bloom Information
Bloom Color: White
Bloom Time: Mar , Apr
Distribution : USA: AL , AR , CT , DC , DE , FL , GA , IA , IL , IN , KS , KY , LA , MA , MD , ME , MI , MN , MO , MS , NC , ND , NE , NH , NJ , NY , OH , OK , PA , RI , SC , SD , TN , TX , VA , VT , WI , WV
Canada: MB , NB , NS , ON , QC
Native Distribution: E. Que. to Man., s. to FL, AL & TX
Native Habitat: Rich, deciduous, upland & floodplain woods
USDA Native Status: L48(N), CAN(N)

Growing Conditions

Light Requirement: Part Shade , Shade
Soil Moisture: Moist , Wet
Soil pH: Circumneutral (pH 6.8-7.2)
Soil Description: Moist to mesic, well-drained, humus-rich soils.
Conditions Comments: Bloodroots spread rapidly and make an excellent ground cover. Mulch the plants with a thin layer of deciduous leaves during the winter. Effective as groundcover around the base of trees, seeds dispersed by ants.

Benefit

Use Other: The red juice from the underground stem was used by First Nations People as a dye for baskets, clothing, and war paint, as well as for insect repellent. (Niering)

Warning: POISONOUS PARTS: Rhizome (thickened roots). May be fatal if ingested! Symptoms include nausea, vomiting, faintness, dizziness, dilated pupils, fainting, diarrhea, heart failure. **Toxic Principle:** Isoquinoline alkaloids.

Conspicuous Flowers: yes

Propagation

Description: The most reliable method of propagation is by seed. Plant seeds immediately after collection as they must not be allowed to dry out. Propagate by rhizome division in either fall or early spring. (Wear gloves and wash your hands after handling the roots
Seed Collection: Approximate collection date in northern U.S.: Early to mid-Jun. Seeds ripen apporximately four weeks after the plant has flowered. Storage must be brief and the seeds must not be allowed to dry out.

Seed Treatment: Not Available
Commercially Avail: yes

Mr. Smarty Plants says

From the National Suppliers Directory -- According to the inventory provided by Associate Suppliers, this plant is available at the following locations:

Edge of the Woods Native Plant Nursery - Orefield, PA
Sunshine Farm & Gardens - Renick, WV
American Native Nursery - Quakertown, PA

From the National Organizations Directory

According to the species list provided by Affiliate Organizations, this plant is on display at the following locations:

Pineywoods Native Plant Center - Nacogdoches, TX
Texas Discovery Gardens - Dallas, TX
Delaware Nature Society - Hockessin, DE
* Available Online from Wildflower Center Store

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http://www.2bnthewild.com/plants/H261.htm

Bloodroot (Sanguinaria canadensis)

Bloodroot is also known as **Puccoon or Red Puccoon, Indian Paint, Redroot, Pauson and Tetterwort.**

Plant Type: This is a herbaceous plant, it is a perennial which can reach 25cm in height (10inches). Only about half that high at the time of blooming.
Leaves: This plant has basal leaves only. Leaves can be as wide as 20 cm (8inches). There is usually only one leaf which has five to nine lobes. It is much smaller at the time the flower is open.
Flowers: The flowers have numerous parts and are up to 5cm wide (2 inches). They are white with yellow center. Blooms first appear in late winter and continue into early spring. The flower usually has eight symmetrically arranged petals four large and four smaller, but can have up to twelve and sometimes sixteen.
Fruit: A two part capsule pointed on both ends with a row of seeds in each half. (see 'Other Images' below)
Habitat: Rich woods. Usually on banks or slopes.
Range: Most of North America east of the Rocky Mountains.

This is the only species of the genus Sanguinaria. While sometimes locally abundant, this plant is generally somewhat rare. It is known from areas that have been little disturbed usually on hills and mountains. A blood red juice can be extracted from the reddish orange root, actually a rhizome, hence the name Bloodroot.

Lore: The juice from the root was used as a body paint and dye by Native Americans. Warriors painted their faces with it and maidens their bodies. Reportedly a woman was given as a bed mate to a colonist at Jamestown by a local tribe and was presented wearing only a coat of red body paint made from Bloodroot.(Dobelis) The root juice has been used as a dye for fabrics producing a yellow orange color that is very fast. It has also been used as a charm. Young men of the Ponca tribe would put the juice of the root on their palm and contrive to shake hands with the maiden they desired to marry and in five or six days she would be willing to marry him.(Foster & Duke) Applying the root or juice to the skin is a questionable activity as the plant is known to be an escharotic, a substance that kills tissue. See warnings below.

Medical Uses: Native Americans, early settlers and herbal practitioners have prescribed Bloodroot for myriad medical conditions from skin cancers to sore throats. Its most persistent and possibly valid use takes advantage of the flesh destroying properties of the root juice or powered root for treating conditions of the skin such as ringworm, warts, polyps, fungal growths and the like. Researchers are investigating the root's value in cancer treatment. An extract has long been used in toothpaste and mouthwash to fight plaque and gingivitis and this use is now sanctioned by the U.S. Food and Drug Administration. The root has been used internally, in very small doses, to stimulate the digestive system and as an emetic. Self medication should be avoided, as the plant can be toxic.

Even small doses can produce unwanted effects such as visual distortions. Warning:T The FDA considers Bloodroot "unsafe" and urges that it not be used by herbal healers. It is far to attractive a plant to dig up anyway. (Erichsen-Brown) (Foster & Duke) (Dobelis)

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http://www.plants.usda.gov/java/profile?symbol=saca13

Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 2: 140.

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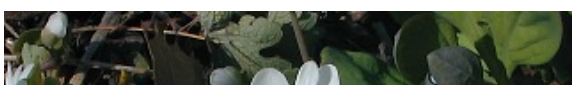
http://www.illinoiswildflowers.info/woodland/plants/bloodroot.htm

Bloodroot

Sanguinaria canadensis




Poppy family (Papaveraceae)

Description: This native perennial plant is about 6" tall. It produces only basal leaves that are about 4-5" wide and across. Each of these basal leaves is wrapped around the stalk of a single flower (sometimes two [Colony of Plants in Bloom] stalks are produced) as the flower begins to bloom. The basal leaves continue to unfold to their fullest extent as the flowers wither away. Each basal leaf is orbicular in outline and palmately veined, with 5-9 major lobes and several minor lobes along the undulating margins. The palmate venation is fairly prominent and provides the rather succulent leaves with a wrinkly appearance. This venation is even more conspicuous on the lower surface, providing a reticulated appearance. The color of the leaves on the upper surface is light green, sometimes with greyish or bluish tints, while the lower surface is whitish green. The round petioles are about 4" long and rather stout. The foliage of this plant is glabrous and glaucous. The flowering stalk is round, stout, hairless, and sometimes slightly reddish, terminating in a single large flower. This stalk is about 3-4" tall when the flower begins to bloom. The flower is about 1½–3" across, consisting of 8-16 white petals, a green oval pistil, and numerous stamens with prominent yellow anthers. The pistil has a pale yellow stigma at its apex. There are 2 light green sepals that are nearly as long as the petals, but they fall off the flowering stalk as soon as the flower begins to bloom. The blooming period occurs from early to mid-spring and lasts about 2 weeks. Each flower remains in bloom for only 1 or 2 days (when it is sunny), and produces a fragrant scent. The seed capsule eventually turns yellow and falls to the ground, splitting open to release the seeds. The root system consists of thick reddish rhizomes with coarse fibrous roots. Both the foliage and the rhizomes contain an acrid reddish juice. This plants often forms vegetative colonies.

Cultivation: During the early to mid-spring, this plant should have access to some sunlight, otherwise the flowers may fail to open. After the trees begin to form leaves later in the spring, considerable shade is tolerated. The soil should be fertile and loamy, with average moisture levels (by woodland [Close-up of Leaf] standards). The foliage is not affected by disease significantly, although it will gradually wither away as the summer progresses.

Range & Habitat: Bloodroot is a common plant that occurs in most counties of Illinois (see Distribution Map). Habitats include mesic deciduous woodlands, either in wooded areas with slopes (ravines, bluffs, valley bottoms), or wooded areas where the ground is reasonably level.

Faunal Associations: The pollen of the flowers attracts various kinds of bees, including honeybees, Little Carpenter bees, Halictid bees, and Andrenid bees. Other insects that visit the flowers include Syrphid flies, bee-flies, and beetles, which feed on the pollen (or search vainly for nectar). The seeds are distributed by ants because of their fleshy appendages. This is a common method of seed distribution for woodland wildflowers, as wind speeds are greatly reduced in wooded areas. The foliage and rhizomes contain an acrid reddish juice and are toxic. Consequently, this plant is not often eaten by mammalian herbivores.

Photographic Location: A partially-shaded flower garden near Busey Woods in Urbana, Illinois.

Comments: Bloodroot is one of the spring ephemerals of deciduous woodlands. It has unusual-looking, but attractive foliage, and very showy flowers, although they are short-lived. Across different localities, there are significant variations in this plant, involving such characteristics as the number of petals and size of the flowers, and the appearance of the foliage. On rare occasions, light pink flowers are produced. The Amerindians created a red dye from the juice of the rhizomes. The

juice of plants in this genus possesses anti-bacterial properties with possible pharmaceutical applications, including an anti-plaque mouthwash.

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http://www.wimastergardener.org/?q=Bloodroot
9 April 2012

Bloodroot, Sanguinaria canadensis






Early spring bloomers are much appreciated after a long, cold winter. Bloodroot is one of the first wildflowers to open its bright white flowers in Midwestern woodlands. This native plant is at home in deciduous forests and in gardens where appropriate conditions can be provided.

Very early in the spring, native wildflowers begin blooming in the forests of Wisconsin. One of the most easily recognizable of these wildflowers is bloodroot, an herbaceous perennial native to eastern North America, from Florida up into Canada. Sanguinaria canadensis is the only species in this genus in the poppy family (Papaveraceae). Other common names include bloodwort, Indian paint, puccoon, and red puccoon. This species is found in Bloodroot and trout lilies in a woodland in southern Wisconsin.undisturbed woodlands, on flood plains and on slopes near streams or ponds in zones 3-8. It is generally rare, but can be locally abundant. The reddish sap that exudes from all parts of the plant, but especially the root, when cut is what prompted the common name of bloodroot.

Sap (R) from the red to orange-colored rhizomes (L) gives rise to the common name of bloodroot.This species grows in clumps, producing leaves and flowers early in the season, then going dormant and disappearing by midsummer. The range in the shape of the leaves and flowers led to divisions into several subspecies, although most taxonomists now consider this just a highly variable species. The flowers and leaves are produced from a shallow-growing, branching, orange-colored rhizome. The rhizome, which is about one-half inch thick and up to four inches long, grows slowly, eventually branching to form a large colony. Bloodroot has morphine-like alkaloids, primarily the toxin sanguinarine, in the rhizome. Although Native Americans used bloodroot sap as an emetic, ingestion of bloodroot is not recommended. Bloodroot in late bloom.It is also an escharotic, a substance that kills tissue, and external application is a skin irritant causing severe burning pain and disfigurement. Because of the flesh-destroying properties of the rhizome's sap, the fresh or powered root was used for treating conditions of the skin such as ringworm, warts, polyps, and fungal growths. Sanguinarine is used in some commercial mouthwashes and toothpastes as a plaque inhibitor. Since even small doses can produce unwanted effects, it is considered unsafe for self medication. Bloodroot is used as a natural red or yellow-orange dye.

The brilliant white – or rarely light pink – flowers up to 2 inches across open in early spring. The blooming period lasts about 2 weeks. Each flower stalk produces a solitary flower with a number of delicate, elongate petals surrounding the numerous yellow stamens and central green pistil, with a pale yellow, two-lobed stigma at its apex. The flower usually has eight symmetrically arranged petals, with four large petals and four smaller ones. But some forms have up to sixteen petals. The flowers open up in sun but close at night or on very cloudy days (when their bee and fly pollinators are not active). The flowers are ephemeral, with the petals falling within a day or two of pollination. The double forms persist longer, however, because those extra petals are really modified stamens, which reduces the chances of pollination – which makes these cultivars more desirable as garden plants. There are a number of semi-double and fully double cultivars, such as 'Multiplex' (= 'Flore Pleno'); the double types are often sterile and will not multiply, except by division.

Bloodroot flowers are variable, usually with 8 petals (L). Some flowers may have 12-16 petals (C), while double forms, such as 'Multiplex' (R) have modified stamens that look like petals.

Bloodroot is cross-pollinated by bees and other insexts, but will self pollinate if not visited by insects.If pollinated, the flowers are followed by elongate seed pods. The two-part capsule is pointed on each end, with a row of 10-15 seeds in each half. The round, red to black seeds ripen by the time the foliage begins to senesce. When ripe, the pods split open to scatter the seed. The seeds have a fleshy organ called an elaisome that is attractive to ants. These insects disperse the seeds when they carry them back to their nests. The seeds are hauled out to the ants' trash dump after the elaisomes are eaten and the seeds are protected within the pile until they germinate.

Elongated seed pods are produced (L and LC) which are filled with reddish seeds (RC) that each have a fleshy elaisome (R) that is attractive to ants.

Leaves and flowers are produced from each end, or branch, of the horizontal rhizome. The plants bloom before the foliage unfolds, with each short (2-4") flower stalk emerging wrapped by one tightly clasping basal leaf enclosing a flower bud which can be purple, yellow, white, or many shades of pink. The pale green to grayish- or bluish-green, palmate leaf is shorter than the flower pedicel, and unfurls as the flower blooms. The rounded, multi-lobed leaves expand to their full size, up to 9 inches across after the flowers fade and the stalk elongates to 12-15 inches tall. Conspicuous venation on the whitish green lower leaf surface creates a reticulated appearance. The species is quite variable, with plants having 5 to 9 deeply-scalloped major lobes and several minor lobes along the undulating margins.

The leaves are wrapped around the flower stem when they first emerge (L), and unfurls as the plants bloom (C) to reach their full size after flowering.

Bloodroot leaves decline as the plant goes dormant.This native wildflower is best grown in moist, humusy, well-drained soils in part shade to full shade (in areas where it will receive sun for at least a few hours in early spring before the trees leaf out). In time it will spread to form large colonies if conditions are appropriate. It is perfectly suited to woodland gardens or any shady areas where the plants can be allowed to naturalize. It combines well with other native woodland wildflowers as well as ferns, hosta, and Virginia Bluebells to provide early season interest before the ferns and hostas emerge. Those plants will then cover up the bloodroot foliage as it senecenes in mid summer

when the plants go dormant.

Bloodroot for gardens should not be collected from the wild.Plants for the garden should be obtained from reputable sources that have not collected them in the wild. This plant can be propagated from fresh seed which should be sown immediately ½ inch deep and kept moist, even though it will not germinate until the following spring (or after several months of cold stratification). It will take 2 to 3 year for plants to reach blooming size. Colonies can also be transplanted, but plants should not be collected from wild populations; over-collecting has led to dramatic declines in natural populations. They are best moved or divided as the plants are starting to go dormant in the summer (gloves should be worn when handling the roots, especially if they are being broken apart for divisions). Plants should be spaced about 6 inches apart with the rhizomes buried no more than an inch deep. It may take a year or more for plants to re-establish unless the roots are left undisturbed when moved.

Patents

US4515779
Skin tumor removal and healing compositions and processes

Inventor: ELLIOTT JOHN Q [US]
Applicant: ARKANSAS MEDICAL RESEARCH & DE [US]

A composition which comprises principally powdered bloodroot powdered ginger root, and zinc chloride in relatively equal parts by weight, is applied in a number of treatments to skin lesions such as epithelioma tumors. After a short time, the growth comes out and a healing ointment comprising lard, lanolin, phenol and tannic acid powder is applied to the site until healing is effected.

BACKGROUND OF THE INVENTION
A. Field of the Invention

This invention relates to compositions of matter and processes and especially to ointments for removing certain types of skin cancers and healing the site of the removed growth.

B. Prior Art
Various natural substances such as herbs or roots have beeb proposed for ingestion to treat cancer as set forth in U.S. Pat. No. 114,544. Sarsaparilla, sassafras bark, bloodroot are parts of a composition described in that patent. More recent U.S. Pat. No. 4,229,437 has taught the use of a different root, namely, dried bittersweet, together with zinc chloride to form a salve which, according to the patent, removes certain types of skin growths when applied topically.

U.S. Pat. No. 1,411,577 to Mullens is an ointment for external application for unspecified conditions or diseases, there being no mention of removal of skin growths or the like. Its ingredients include bloodroot and zinc chloride as well as an equal part of metallic cobalt and some glycerine to form a paste.

Ginger has also been used for many years as an ingredient for medicines or liniments for many different medical problems such as headache, toothache, removal of blotches and pimples, and animal diseases. Such usage is shown in Schroeck U.S. Pat. No. 267,159; Ward U.S. Pat. No. 95,173; Barger U.S. Pat. No. 92,248 (cholera), Perrin U.S. Pat. No. 448,728 (panacea) and Ramsaur U.S. Pat. No. 92,209 (blotch and pimple removal).

While each of the three ingredients of the present invention have been used as components in medicines or ointments, they have never appeared together in the form which has been found by the present inventor to be an extremely effective ointment for removing certain skin growths of the malignant type.

I have discovered through repeated experimentation and treatment of human patients that if substantially equal parts, by weight, of powdered bloodroot, powdered ginger (kowlang) root, and zinc chloride are formed into a paste, allowed to stand, then applied to certain skin cancers such as epithelioma in a series of successive treatments as detailed below, the cancerous growth or lesion

selectively becomes disengaged from the surrounding dermal region in a number of days and may be easily removed. After removal, I then begin treatment of the former site of the growth with a healing ointment which comprises hog lard, lanolin, liquefied phenol and tannic acid, as will be described later.

My epitheliomal cancer-removing ointment comprises approximately equal parts by weight of (1) bloodroot in its powdered form such as Penick's "Initial Line" powdered bloodroot U.S.P. distributed by S. B. Penick and Co. of New York and Chicago, (2) powdered ginger root and (3) zinc chloride. The ginger root used was manufactured by S. B. Penick and Co. in its U.S.P. form. The zinc chloride may be, for example, the U.S.P. form 1-4326 marketed by the J. T. Baker Chemical Co. of Phillipsburg, N.J.

To make this epitheliomal cancer-removing ointment, the zinc chloride is exposed to air for several days whereupon it becomes a thick liquid. It is then added to the bloodroot and ginger root and blended together to form a paste which does not run or drop. Then the paste is allowed to set for about a week or two.

When a patient with epithelioma, malignant moles or sun spots is treated, the ointment is applied with an applicator to the lesion which, at first, appears to be, externally, very small. The day after, the previously-applied ointment is removed by swabbing with a cotton-tipped applicator which has been dipped in rubbing alcohol. An additional amount of fresh growth-removing ointment is again applied to the lesion. In the days following, the treatment is repeated in the same way. These successive applications of the removing ointment result in the lesion appearing to have a progressively larger external aspect. Depending upon the original size of the lesion, the period of enlargement may range from 4-8 days, for example. When the lesion maintains dimensional stability, it usually is ready to fall out and may easily be picked out.

At this juncture, I have found that it is highly advantageous to use a second healing-promoting ointment. This ointment is made by mixing one half pound each of hog lard and lanolin (hydrous) U.S.P. grade 1-2253 such as the product distributed by the J. T. Baker Company mentioned above. To this combination 15-20 drops of liquefied phenol U.S.P. grade as distributed by J. T. Baker or Merck, for example, is added. Liquefied phenol is 89% phenol and 11% water. Then 1/3 of a teaspoon of food grade gallotannic acid powder such as 1-0380 marketed by J. T. Baker and one oz. of white beeswax U.S.P. grade such as #0207 cakes sold by Humco Laboratory of Texarkana, Tex. are added. The ingredients are put into a double boiler and heated for 30-60 minutes until the mixture becomes entirely liquid, the ingredients being continually stirred. It is then allowed to cool whereupon it solidifies and becomes a salve or ointment.

This salve is applied by the patient to the site of the former lesion twice daily. To prevent scarring, it is important to insure that no excessive phenol remains on the healing skin, so that after it is applied, it is washed off quickly with alcohol. After each three days of applying the healing salve, the patient should return to the doctor for a check-up.

EXAMPLE 1

A 62 year old white male had two epithelioma cancers; one one the nose (basal cell) which was 4 cm before and 6 cm after treatment and the second on his neck (squamous cell) which was 1/2 in. before and 11/2 in. after treatment. The removal salve was first applied on Feb. 2, and was treated with it each consecutive day from the 2nd to the 10th. On the 16th of Feb., both lesions were out and treatment with the healing salve began. On March 3, they were healed.

EXAMPLE 2

A 52 year old white male with a basal cell on the right cheek. First treatment was March 1 and was continued through March 4th. On March 12th, the lesion was out and it was dressed with the healing ointment. It was then applied every day until April 18th, the day it was healed.

CN1264511
Extraction of protopine from plant, and its manufacture of medicinal preparation and use

The invention discloses a preparation and application of macleyine and other medicine preparation extract from plants, its character lies in: it extracts macleyine with purity of 98% from bloodroot, and part of barberry family and buckthorn plants, and produces solid preparation, injection preparation compound with medicine accessories, the product can be used for curing heart and brain vessel diseases, and AD sufferer, at the same time, the product also has functions of analgesia, anticholinesterase functions and it can advances the bile secretion, and so on.

US2010040708

An herbal composition for treating menopausal symptoms in a woman includes yarrow, damiana, skullcap, chaste tree berry, wild yam, corn silk, cramp bark, bloodroot, fenugreek, feverfew, cardamom, and panax ginseng. The herbal composition may either be in a liquid dosage form or in a solid dosage form. Further disclosed is a method for treating menopausal symptoms in a woman using the aforementioned herbal composition. The method includes orally administering the herbal composition, one to two times per day, to the woman.

CN101756851
Bloodroot alkaloid dental plaque-proof mouthwash

The invention relates to a bloodroot alkaloid dental plaque-proof mouth wash, which comprises trisodium citrate.dihydrate, citric acid anhydride, alcohol, polyoxyethylene (62)-polyoxypropylene (39)-polyoxyethylene (62) polyether, polyoxyethylene ether (20) sorbitan monooleate, essence, zinc chloride, glycerol, saccharin, bloodroot extract (1 percent) and refined water. The mouthwash is spitted after being kept in the mouth for 1 to 2 minutes. The pH value of the mouthwash is 4 to 5.6, and therefore, the mouthwash is very stable, can effectively absorb dental plaques, thereby playing a dental plaque-proof role.

Technical areas:

The present invention relates to a blood grassroots alkaloids, anti-plaque mouthwash, belongs to the field of oral health care.

Background technology:

The plaque will lead to various diseases such as dental caries, periodontitis.
In order to prevent the plaque, it is necessary to clean the mouth.

But currently, domestic and outside mouthwash many types of water, but a very effective anti-plaque mouthwash is rare.
The object of the present invention is to provide a pH value of from 4 to 5.6, very stable, dental plaque, which can effectively absorb play an anti-plaque blood grassroots alkaloids anti-plaque mouthwash.

SUMMARY OF THE INVENTION:

The present invention relates to a blood grassroots alkaloids anti-plaque mouthwash is tri-sodium citrate dihydrate, citric anhydride, ethanol, polyoxyethylene (62) polyoxypropylene (39) polyoxyethylene (62) polyethylene ether, polyoxyethylene vinyl ether (20) sorbitan monooleic acid ester, flavor, zinc chloride, glycerin, saccharin, blood grassroots extract (1%), and purified water.

Containing spit in the mouth after one minute.

Lift the etiology of dental caries, periodontitis, doctors will be referred to a single word: "plaque. Plaque is a thin film on the surface of the teeth contains many bacteria.

Its formation can be divided into three steps: First, in the saliva in the mouth to form a film on the tooth surface (its formation speed quickly, on the just cleaned teeth cooked minutes formation); then, intraoral The bacterial species ordered adsorption Ordering in this layer on the film; Finally, bacterial growth and reproduction in this layer of saliva film gradually cast the type and quantity of

bacteria is gradually increased to become mature plaque.

Individual bacteria in the dental plaque bacteria associated with oral, by virtue of the the plaque layer unique film structure, various bacteria firmly adhering to the tooth surface and can not be washed out or rinse out, difficult to remove.

The same time, the connection between the membrane of bacteria is also very close, able to resist the defense capabilities of the human body and the killing effect of the drug, and thus long-term survival in the oral cavity. Harmful bacteria in the plaque gradually increased, and can lead to the various diseases of the teeth and gums.

4 to 5.6, the pH value of the present invention is very stable, which can effectively absorb the dental plaque, and play a role in anti-plaque.

Below in conjunction with the embodiment of the present invention will be further described.

Example 1: for each mouthwash the ratio of the respective components of the water as follows: tri-sodium citrate dihydrate 0.3%, 0.02% of citric anhydride, ethanol 12%, polyoxyethylene (62) polyoxypropylene (39) polyoxypropylene ethylene (62) Polyether 0.3% polyoxyethylene ether (20) sorbitan monooleate 0.3% 0.5%, flavor, zinc chloride and 0.4%, glycerol 5.0%, 0.10% saccharin, blood grassroots extract (1%) 5.0%, and the balance purified water.

Made mouthwash directly after mouthwash containing spit in the mouth after 1-2 minutes.

For 10 consecutive days, every morning and evening, dental caries pain eased significantly.

Example 2: The ratio of the each mouthwash respective components is as: tri-sodium citrate dihydrate 0.2%, 0.01% of the citric anhydride, ethanol 10%, polyoxyethylene (62) polyoxypropylene (39) polyoxypropylene ethylene (62) Polyether 0.2% polyoxyethylene ether (20) sorbitan monooleate 0.2% 0.2%, flavor, zinc chloride and 0.2%, glycerol 3.0%, 0.05% saccharin, blood grassroots extract (1%) 3.0%, and the balance purified water.

Made mouthwash directly after mouthwash containing spit in the mouth after 1-2 minutes.

Long-term use, gingival inflammation disappeared a month later, the plaque did not continue to increase.

Bloodroot Seeds

http://www.ebay.com/itm/Bloodroot-Woodland-Native-40-Seeds-/221053578267?pt=LH_DefaultDomain_0&hash=item3377d1ec1b
http://www.ebay.com/itm/Bloodroot-Jumbo-Wildflower-Seed-Packet-10-/290849619878?pt=LH_DefaultDomain_0&hash=item43b7fcffa6
http://www.ebay.com/itm/2012-SEEDS-Native-BLOODROOT-Sanguinaria-canadense-SEEDS-20112-/130828537506?pt=LH_DefaultDomain_0&hash=item1e75fd0ea2


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