

Technical Data Report

for

ABUTA

Cissampelos pareira



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Abuta

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Family: Menispermaceae

Genus: *Cissampelos*

Species: *pareira*

Synonyms: *Cissempelos acuminata*, *C. argenta*, *C. auriculata*, *C. australis*, *C. benthamiana*, *C. boivinii*, *C. bojeriana*, *C. caapeba*, *C. canescens*, *C. cocculus*, *C. consociata*, *C. convolvulacea*, *C. cordata*, *C. cordifolia*, *C. cumingiana*, *C. delicatula*, *C. diffusa*, *C. discolor*, *C. diversa*, *C. elata*, *C. ellenbeckii*, *C. ericarpa*, *C. glaucescens*, *C. gracilis*, *C. grallatoria*, *C. guayaquilensis*, *C. hederacea*, *C. hernandifolia*, *C. heterophylla*, *C. hirsuta*, *C. hirsutissima*, *C. kohautiana*, *C. limbata*, *C. littoralis*, *C. longipes*, *C. mauritiana*, *C. microcarpa*, *C. monoica*, *C. nephrophylla*, *C. oblecta*, *C. orbiculata*, *C. orbiculatum*, *C. orinocensis*, *C. pannosa*, *C. piolanei*, *C. smalzmanni*, *C. subpeltata*, *C. subreniformis*, *C. tamoides*, *C. testudinum*, *C. tetrandra*, *C. tomentocarpa*, *C. tomentosa*, *C. violaeifolia*, *Cocculus orbiculatus*, *C. villosus*, *Dissopetalum mauritianum*

Common Names: Abuta, abutua, barbasco, imchich masha, butua, false pareira, pareira, aristoloche lobe, bejuco de raton, feuille coeur, liane patte cheval, gasing-gasing

Parts Used: Whole vine, seed, bark, leaf

Abuta is a woody, climbing vine with leaves up to 30 cm long. It produces inedible, dark, grape-sized berries. It belongs to the genus *Cissampelos*, in which 30–40 species of vines are represented. Abuta vine is blackish-brown and tough; when freshly cut it has a waxy luster. Abuta is found throughout the Amazon in Peru, Brazil, Ecuador, and Colombia, and is cultivated by many to beautify their gardens.

The common name of this plant has caused some confusion. In Brazil it is well known as *abutua*, and in Peru it is known as *abuta* or *barbasco*. Reference to *abuta* in herbal commerce may imply either *Cissampelos pariera* or *Abuta grandiflora*. *Abuta grandiflora*, another tropical vine, also has the common name of abuta in South America—but this is a very different plant with different pharmacology and uses in herbal medicine. This plant is referred to in Peru as *chiric sanago* as well as abuta (hence the confusion).

Abuta (*Cissampelos pariera*) is commonly referred to as the *midwives' herb* throughout South America for its long history of use for all types of women's ailments. In their book *Medical Botany*, Walter and Memory Lewis state, "*Cissampelos pareira* roots are used in tropical countries to prevent a threatened miscarriage. The herb is also used to stop uterine hemorrhages." Midwives in the Amazon still carry abuta with them for menstrual cramps and pre- and postnatal pain and uterine hemorrhaging. It is also believed to aid poor digestion, drowsiness after meals, and constipation. It has been used by indigenous peoples throughout the South American rainforest for thousands of years for other ailments, and is still in use today. The Palikur tribe in Guyana use a poultice of abuta leaves as a topical analgesic, and the Wayãpi Indians use a decoction of leaf and stem as an oral analgesic. Ecuadorean Ketchwa tribes use the leaf decoction for conjunctivitis and snakebite. The Créoles in Guyana macerate the leaves, bark, and roots with rum and use it as an aphrodisiac; the Sionas use the leaf decoction for fever. Indigenous tribes in Peru use the seeds of abuta for snakebite, fevers, venereal disease, and as a diuretic and expectorant. Amazonian herbal healers and shamans, called *curanderos*, toast the seeds of abuta and then brew them into a tea to treat internal hemorrhages and external bleeding. They also brew a leaf tea for rheumatism and a vine wood-and-bark tea to treat irregular heartbeat.

Abuta is widely employed in Brazilian herbal medicine today as a diuretic, tonic, and febrifuge. It is often employed for menstrual cramps, difficult menstruation and excessive bleeding, fibroid tumors, pre- and postnatal pain, colic, constipation, blennorrhagia, poor digestion, and dyspepsia. It is a common Brazilian remedy to prevent threatened abortion, relieve menorrhagia, and arrest uterine hemorrhages. Abuta has a long history of use in Mexico for muscle inflammation, snakebite, rheumatism, diarrhea, dysentery, and as an emmenagogue. In Argentina abuta is used for diarrhea, respiratory and urinary tract infections, and for its emmenagogue properties. In Guatemala the root of abuta is used as an emmenagogue, diuretic, febrifuge, sudorific, and antirheumatic. In North American herbal medicine it is used for inflammation of the testicles and minor kidney problems.

The genus *Cissampelos* contains alkaloids characteristic of other members of the family Menispermaceae. Saponins and sterols are common; occasional triterpenes, ethereal oils, polyterpenes, and polyphenols also are present. The isoquinoline alkaloids in abuta, however, have received the most attention and research (commencing in the late 1960s).^{1,2} Out of 38 alkaloids discovered in abuta thus far, one called *tetrandrine* is the most well documented (about 8.25 mg of tetrandrine is found in one gram of abuta root). In clinical research over the years, tetrandrine has been documented with analgesic, anti-inflammatory, and febrifuge properties.³ Over 100 recent clinical studies also describe this chemical's promising actions against cancer and leukemia cells, and research is ongoing. The therapeutic dosages of tetrandrine in these animal studies, however, are reported at much higher dosages than is found in abuta root or vine (25 to 100 mg/kg of tetrandrine). Other recent published studies concern tetrandrine's cardioactive and hypotensive effects through numerous pathways and mechanisms of action. Another alkaloid, berberine, has been documented to be hypotensive, antifungal, and antimicrobial; it is used for the treatment of cardiac arrhythmia, cancer, candidiasis, diarrhea, and irritable bowel syndrome.⁴ The alkaloid cissampeline is sold as a skeletal muscle relaxant drug in Ecuador, and other alkaloids in abuta have been documented with neuromuscular blocking action.⁵

In 1962 researchers reported that abuta extracts (leaf, vine, and root) demonstrated anti-inflammatory, smooth muscle relaxant, uterine relaxant, and antispasmodic activities in rats, guinea pigs, and rabbits.⁶ In subsequent studies, researchers in Thailand reported the antispasmodic and histamine-blocking actions of an abuta root extract in guinea pigs;⁷ researchers in Germany documented the anti-inflammatory properties of abuta obtained in Mexico.⁸ These documented effects are quite similar to the properties attributed to the plant's herbal medicine and folklore uses for menstrual disorders (including cramping and pain). A root extract administered to rats (1 g/kg) was reported to have a diuretic effect, which also confirms another of its traditional medicine uses.⁹

Other *in vivo* research on extracts of abuta has indicated antiulcerous actions in mice (100 mg/kg of a leaf extract).¹⁰ A water extract of the root evidenced a mild or weak hypoglycemic activity when given in high dosage (5 g per animal) to rabbits.¹¹ An ethanol extract of the root was shown to have anticonvulsant actions in mice¹² and, in dogs, water and alcohol extracts showed marked hypotensive actions.^{6,7} *In vitro* testing over the years has reported that abuta has antioxidant properties;¹³ the root and leaf have shown antibacterial properties against *Staphylococcus*, *Pseudomonas*, *Salmonella*, and *Klebsiella*,^{10,14} as well as antimalarial effects.^{15,16} One of these studies also reported that a root extract demonstrated an *in vitro* cytotoxic effect against colon cancer cells (IC₅₀ = 8.6 mcg/ml).¹⁶

Abuta still is used in the Amazon and outlying areas for the same purposes that it has been used traditionally for centuries. South and North American natural health practitioners commonly rely on abuta as an excellent natural remedy for many ailments, with its main use for women's complaints as an aid to relieve symptoms associated with menstruation. Toxicity studies with animals confirm the safety of the plant. Rats administered 10 g of root per kg of body weight gastrically, and 1 g of root per kg subcutaneously evidenced no toxic effects.¹⁷

Documented Properties and Actions: Analgesic, antibacterial, anticonvulsant, anti-inflammatory, antileukemic, antimalarial, antiseptic, antispasmodic, anti-tumorous, aperient, cytotoxic, diuretic, emmenagogue, expectorant, febrifuge, hepatoprotective, hypotensive, insecticidal, piscicidal, purgative, stimulant, stomachic, tonic

Main Phytochemicals: Alkaloids, arachidic acid, bebeerine, berberine, bulbocapnine, cissamine, cissampareine, corytuberine, curine, 4-methylcurine, cyclanoline, cycleanine, dicentrine, dehydrodicentrine, dimethyltetrandrinium, essential oil, grandirubrine, hayatine, hayatine, insularine, isochondodendrine, isomerubrine, laudanosine, linoleic acid, magnoflorine, menismine, norimeluteine, nor-ruffscine, nuciferine, pareirine, pareirubrine alkaloids, pareitropone, quercitol, stearic acid, tetrandrine

Traditional Remedy: A standard decoction can be administered orally or applied topically to affected areas. The traditional natural remedy for menstrual disorders and pain is generally 1–2 g daily of the powdered vine or root, or 1–2 ml of a 4:1 tincture daily in divided doses.

Contraindications: Abuta has been documented to have hypotensive activity in two animal studies; therefore, abuta is contraindicated for people with low blood pressure. An alkaloid in abuta, tetrandrine, has been documented to have various actions on heart function in animals and humans. Those with a heart condition or taking heart medications should consult with their doctor before using this plant.

Abuta should only be used under the supervision of a qualified healthcare practitioner if pregnant.

Drug Interactions: May potentiate prescription heart medications.

WORLDWIDE ETHNOBOTANICAL USES

Region	Uses
Africa	Abdominal pain, abortifacient, abortion, analgesic, antiabortive, antipyretic, antirheumatic, blenorrhagia, CNS stimulant, cold, cough, diarrhea, fainting, guinea worm, headache, hematuria, hookworm, malaria, menorrhagia, muscle relaxant, neuralgia, pain during pregnancy, pimples, placental expulsion, rheumatism, sedative, sexual stimulant, snakebite, sore throat, stomach pain, tonic, wound
Amazonia	Childbirth, colic, fever, muscle relaxant, nervous children, pinto, snakebite
Argentina	Diarrhea, emmenagogue, respiratory tract infections, urinary tract infections
Brazil	Abortive, analgesic, anemia, antispasmodic, aphrodisiac, asthma, bladder, catarrh, cholagogue, colic, constipation, contusions, cramps, cystitis, decongestant, digestion, diuretic, drowsiness, dysentery, dysmenorrhea, dyspepsia, emmenagogue, febrifuge, fever, gallbladder, hepatitis, hydropsy, inflammations, liver, menstrual suppression, muscle, testicle inflammation, threatened miscarriage, pre- and postnatal pain, renal stones, rheumatism, snakebite, stomachic, sudorific, tonic, urinary disorders, uterine hemorrhages
Colombia	Arrow poison, emmenagogue

Region	Uses
Guatemala	Antidote, antirheumatic, cramps, diuretic, emmenagogue, erysipelas, febrifuge, fever, painful navel, snakebite, sudorific
Haiti	Diuretic, fever
India	Abdominal pain, antifertility, antivenin, anthelmintic, asthma, boil, bronchitis, burn, chill, cholera, cold, colic, conception, convulsion, cough, cut, delirium, diarrhea, diuretic, dog bite, dysentery, emmenagogue, epilepsy, eye, fever, gravel, heart, hematuria, madness, malarial fever, pimples, rabies, snakebite, sores, sprains, stomachache, threatened miscarriage, toothache, typhoid fever, worms, wound
Ivory Coast	Abortive, childbirth, diuretic, emmenagogue
Mexico	Bladder, dermatitis, diarrhea, diuretic, dropsy, dysentery, emmenagogue, expectorant, fever, insect bites, jaundice, leucorrhea, muscle inflammation, nephritis, pimples, poultice, rheumatism, snakebite, tonic, urogenital
Nicaragua	Bites, fever, skin rash, sores, stings, venereal disease
Senegal	Antiseptic, blenorrhagia, conjunctivitis, diarrhea, enteralgia, stomachache, syphilis, whooping cough
USA	Diuretic, laxative, urinary tract irritation
Venezuela	Bladder, calculus, diuretic, kidney, snakebite
Elsewhere	Abortive, anabolic, analgesic, anemia, antiecbolic, antimalarial, aphrodisiac, asthma, boil, carbuncle, childbirth, cough, cystitis, diabetes, diarrhea, diuretic, dropsy, dyspepsia, emmenagogue, expectorant, eye, febrifuge, fetal growth, fever, heart, hemorrhage, hypertension, indigestion, itch, lithontriptic, malaria, menorrhagia, narcotic, parturition, piscicide, poison, post-menstrual hemorrhages, purgative, rheumatism, sexual stimulant, snakebite, sore, sterility, stimulant, styptic, testicle inflammation, threatened miscarriage, tonic, urogenital, uterine hemorrhage, venereal disease, wound

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The information contained herein is intended for education, research, and informational purposes only. This information is not intended to be used to diagnose, prescribe or replace proper medical care. The statements contained herein have not been evaluated by the Food and Drug Administration. The plant described herein is not intended to diagnose, treat, cure, mitigate, or prevent any disease.

Ethnomedical Information on *Abuta* (*Cissampelos pareira*)

Plant Part / Location	Documented Ethnic Use	Type Extract / Route	Used For	Ref #
Leaf + Root East Africa	Used for stomach pains. Roots and leaves are chewed. Used for pains during pregnancy. Roots and leaves are chewed. Used to treat wounds.	Leaf + Root Oral Leaf + Root Oral Ash External	Human Adult HumanFemale Human Adult	T10078
Leaf East Africa	Used after birth to facilitate expulsion of placenta.	H2O Ext Oral	Cow(pregnant)	K04594
Root East Africa	Used as a sexual stimulant. Used for hematuria. Used for pimples. Used for neuralgia. Used for hookworm. Used for snakebite. Root scrapings are eaten, and applied to bite. Used for sore throats. Root powder is soaked in water. Used as a sexual stimulant, for rheumatic pains and abdominal pains. Used for colds and coughs. Root powder is soaked in water. Used for headache and blenorrhagia. Used as a tonic. Used to treat habitual abortion; in combination with <i>Sida rhombifolia</i> .	Not Stated Oral Hot H2O Ext Oral Decoction External Ash External Decoction Oral Root Oral H2O Ext Oral Root Oral H2O Ext Oral Hot H2O Ext Oral Decoction Oral	Human Male Human Adult Human Child Human Adult Human Adult Human Adult Human Adult Human Adult Human Adult Human Adult Human Adult Human(pregnant)	A03479 T10078 T10078 T10078 T10078 T10078 T10078 T10078 T10078 T10078 T10078 T10078
Leaf West Africa	Used for guinea worm.	Hot H2O Ext External	Human Adult	M23617
Aerial Parts Amazonia	Used to stop uterine hemorrhages. Used to prevent threatened miscarriage.	Hot H2O Ext Oral Hot H2O Ext Oral	Human Female Human(pregnant)	L02535
Root Amazonia	Used for fevers and during childbirth for when too much blood is lost and the stomach hurts. Used for snakebite and as a muscle relaxant. Used for nervous children, for colic and to make a child strong.	Infusion Oral Infusion Oral	Human Adult Human Child	ZZ1005
Root Amazonia	Used for post-menstrual hemorrhages. Used for rheumatism.	Decoction Oral ETOH Ext Oral	Human Female Human Adult	L04137
Stem + Root Amazonia	Used to treat sterile women.	Decoction Oral	Human Female	L04137
Bark + Stem Amazonia	Used as a dental analgesic.	Decoction Oral	Human Adult	L04137

Plant Part / Location	Documented Ethnic Use	Type Extract / Route	Used For	Ref #
Vine Amazonia	Used as a diuretic, expectorant, emmenagogue and febrifuge. Used to relieve symptoms associated with menstruation; to balance female hormones; to prevent threatened abortion, relieve menorrhagia and arrest uterine hemorrhages, for relief of inflammation of the testicles and for minor kidney problems.	Decoction Oral	Human Adult	ZZ1015
Not Stated Amazonia	Used to treat 'pinto,' a disease that causes purplish patches to appear on the face and arms.	Not Stated External	Human Adult	ZZ1005
Leaf Argentina	Used as an emmenagogue.	Hot H2O Ext Oral	Human Female	T03717
Root Argentina	Used for diarrhea, to treat respiratory tract and urinary tract infections. Used as an emmenagogue.	Decoction Oral Hot H2O Ext Oral	Human Adult Human Female	K17523 T15375
Not Stated Argentina	Used as an emmenagogue.	Not Stated Oral	Human Female	A03467
Root Bolivia	Used as a diuretic.	Hot H2O Ext Oral	Human Adult	W01206
Leaf Brazil	Used for affections of the digestive system, as a diuretic and a febrifuge.	Infusion Oral	Human Adult	ZZ1092
Root Brazil	Used to stop uterine hemorrhages. Used to prevent threatened miscarriage. Used as an emmenagogue. Used as a tonic, diuretic and febrifuge. Used for treating renal stones. Used for inflammations and contusions.	Hot H2O Ext Oral Hot H2O Ext Oral Hot H2O Ext Oral Decoction Oral Cataplasm External	Human Female Human(pregnant) Human Female Human Adult Human Adult	L02535 L02535 T15375 ZZ1005 ZZ1005
Root Brazil	Used for women's affections. Used as an antispasmodic and analgesic for treating cramps, painful menstruation and pre and post-natal pain. Used to prevent a threatened miscarriage and uterine hemorrhages. Aids poor digestion, drowsiness after meals and constipation.	Infusion Oral	Human Adult	ZZ1070
Root Brazil	Used as a tonic and as an aphrodisiac. Used for affections of the urinary system, as a diuretic and sudorific. Used for dyspepsia, asthma and for fevers. Used as a tonic, diuretic, febrifuge and emmenagogue. Used for dysentery, dysmenorrhea, cystitis and liver ailments.	Infusion Oral Decoction Oral Decoction Oral Decoction Oral Various Oral	Human Adult Human Adult Human Adult Human Adult Human Adult	ZZ1092 ZZ1096 ZZ1096 ZZ1099 ZZ1099

Plant Part / Location	Documented Ethnic Use	Type Extract / Route	Used For	Ref #
Root Brazil	Used as a tonic, diuretic and aperient. Acts as an antiseptic to the bladder. Used for chronic inflammation of the urinary tract, renal calculi, leucorrhea, rheumatism, jaundice, dropsy, gonorrhoea and snake bite.	Infusion Oral	Human Adult	ZZ1052
Root Brazil	Used as a tonic, stomachic, emmenagogue and diuretic. Used for dyspepsia, hepatitis, problems of the bladder, hydropsy, catarrh, flatulent colic, snakebites, anemia, renal calculi, intermittent fever, uterine colic, difficult menstruation and suppression of menstruation, inflammation of the testicles, for the gallbladder and for muscle fibers. Used as an abortive.	Not Stated	Human Adult	ZZ1079
Root Brazil	Used as a tonic, febrifuge, sudorific, stomachic, antiasthmatic, diuretic, antilithic, cholagogue, digestive and emmenagogue. Used for dyspepsia, urinary affections, renal calculi, disturbances in menstruation, affections of the liver and gallbladder, hydropsy, fever, rheumatism and asthma.	Infusion Oral	Human Adult	ZZ1072
Root Brazil	Used as a diuretic, febrifuge, emmenagogue and cholagogue. Used for hydropsy, affections of the renal and urinary systems. Used for affections of the liver. Acts as a decongestant.	Infusion Oral	Human Adult	ZZ1007
Not Stated Brazil	Used as an emmenagogue.	Not Stated	Human Female	J01423
Leaf + Root China	Used as a narcotic.	Not Stated Oral	Human Adult	T09391
Aerial Parts Colombia	Used as an emmenagogue at a dosage of 1-2 gm per day.	H2O Ext Oral	Human Female	A00710
Entire Plant Colombia	Used as an emmenagogue.	Hot H2O Ext Oral	Human Female	T15375
Root Colombia	Used as an emmenagogue at a dosage of 1-2 gm per day.	H2O Ext Oral	Human Female	A00710
Not Stated Colombia	Used as an arrow poison (curare). A principle component of curare.	External External	Animals & Humans	K27338 ZZ1031
Leaf Ecuador	Used for infected eyes.	Decoction External	Human Adult	ZZ1005
Not Stated Ecuador	Used as an arrow poison.	External	Animals & Humans	ZZ1031

Plant Part / Location	Documented Ethnic Use	Type Extract / Route	Used For	Ref #
Root Guatemala	Used as an emmenagogue. Used as a diuretic, febrifuge, sudorific and as an antirheumatic. Used for cramps.	Hot H2O Ext Oral Hot H2O Ext Oral Not Stated Oral	Human Female Human Adult Human Adult	T15295 T15295 W01280
Essential Oil Guatemala	Used to bathe new-born children for painful navel.	Decoction External	Human Child	K28434
Leaf Guyane	Used as an analgesic.	Poultice External	Human Adult	ZZ1033
Entire Plant Guinea-Bissau	Used as an abortive in high doses; used to facilitate childbirth. Considered to be an emmenagogue.	H2O Ext Oral Hot H2O Ext Oral	Human(pregnant) Human Female	A00455
Entire Plant Haiti	Used as a diuretic. Used against fever.	Hot H2O Ext Oral Hot H2O Ext Oral	Human Adult Human Adult	T04647
Aerial Parts India	Used for temporary control of conception.	Aerial Parts Oral	Human Female	T06787
Entire Plant India	Used for snakebite. Plant is made into a paste and applied to bite, juice is dropped into the nostrils, ears, and naval cavity.	Plant External	Human Adult	T09390
Plant Juice India	Used to treat minor accidents. Juice is mixed with jaggery and egg. Used for snakebite.	Plant Juice Oral Juice External	Human Adult Human Adult	T08282 T09390
Flowers India	Used to remove redness of the eyes.	Leaf Juice Ophthalmic	Human Adult	K23156
Leaf India	Used for cuts and wounds. Applied to the forehead for cold and fever. Used as an antidote for snake bite. Used for malarial fever. Used for coughs and colds. Used to treat pimples, boils, burns and wounds. Used as a contraceptive.	Leaves External Leaves External Powder External Leaves External Hot H2O Ext Oral Leaves External Leaves Oral	Human Adult Human Adult Human Adult Human Adult Human Adult Human Adult Human Female	K26667 K26667 K26968 K27075 T10064 M23372 T06787
Leaf Juice India	Used for sores and abdominal pain. Used to treat eye ailments.	Juice External Juice External	Human Adult Human Adult	M22542 M23372
Leaf + Root India	A paste is used to treat toothache.	Leaf + Root Oral	Human Adult	L02963

Plant Part / Location	Documented Ethnic Use	Type Extract / Route	Used For	Ref #
Root India	Used as an emmenagogue. Claimed to be used as an antifertility agent. Used as an emmenagogue. Used for fevers. Given 3 times a day for 3 days. Used for stomachache. About 5 g twice a day. Used to treat common fevers. Root bits are worn around the neck. Used as an antivenin. Used to treat fever that comes after child birth. Used to treat typhoid fever. Used to treat stomachache. Used for malarial fever. Used for malaria fever. Used to prevent abortion. A root paste is used to cure wounds. Used to remove intestinal worms. Used as an emmenagogue and as a diuretic.	Hot H2O Ext Oral Hot H2O Ext Oral Not Stated Oral H2O Ext Oral Powder Oral Root External Various Oral Root Oral Decoction Oral Root Oral Root Oral Root Oral Decoction Oral Root External Hot H2O Ext Oral Hot H2O Ext Oral	Human Female Human Female Human Female Human Adult Human Adult Human Adult Human Adult Human Female Human Adult Human Adult Human Adult Human Adult Human Adult Human Adult Human Adult Human Adult Human Adult	A00449 A00468 A04132 K23156 K23294 K23824 K25892 K26099 K26734 K26734 K26725 K27454 M27166 T00583 W00798 W01315
Root India	Used for heart troubles, for fevers, dysentery and asthma. Used to remove intestinal worms. Used for stomachache. Used for sprains. Used as an anthelmintic in infants and for dysentery. Used for stomachache. Used for colic. Root paste is taken internally.	Hot H2O Ext Oral Hot H2O Ext Oral Root Oral Root External Root Oral Not Stated Oral Root Oral	Human Adult Human Adult Human Adult Human Adult Human Child Human Adult Human Adult	W00756 W00803 K25403 K25403 T09390 T09390 T08191
Rootbark India	Used as a diuretic.	Hot H2O Ext Oral	Human Adult	W01144
Not Stated India	Used as an oral contraceptive.	Decoction Oral	Human Female	T16085
Entire Plant Ivory Coast	Used as an emmenagogue. Fresh pulp mixed with clay to facilitate delivery. Strong dose of fresh pulp mixed with clay can cause abortion. Used as an emmenagogue. Fresh pulp mixed with kaolin to facilitate delivery. Strong dose of fresh pulp mixed with kaolin can cause abortion.	Hot H2O Ext Oral Plant Vaginal Plant Vaginal Hot H2O Ext Oral Plant Vaginal Plant Vaginal	Human Female Human(pregnant) Human(pregnant) Human Female Human(pregnant) Human(pregnant)	A04941
Leaf Pulp Ivory Coast	Used as an abortive.	Plant Oral	Human(pregnant)	W00113
Not Stated Ivory Coast	Used as an emmenagogue and as a female diuretic.	Hot H2O Ext Oral	Human Female	W00113

Plant Part / Location	Documented Ethnic Use	Type Extract / Route	Used For	Ref #
Root Madagascar	Used as an emmenagogue. Used as a febrifuge and diuretic.	Hot H2O Ext Oral Hot H2O Ext Oral	Human Female Human Adult	W00663
Not Stated Malawi	Used to promote good fetal growth and for an easy labor.	Hot H2O Ext Oral	Human(pregnant)	T09487
Leaf Mexico	Used to treat muscle inflammation. Used to treat snake bites. Used to treat dermatitis. Crushed leaves used over affected area.	Leaves External Decoction Oral Leaf Juice External	Human Adult Human Adult Human Adult	K16948
Leaf + Root + Stem Mexico	Used for rheumatism. Used for snakebite.	Infusion Oral Infusion External	Human Adult Human Adult	L15716
Root Mexico	Used as an emmenagogue. Used to treat dysentery. Used to treat diarrhea and dysentery. Said to have emmenagogic properties. Used for pimples and insect bites. Crushed root is rubbed on area.	Hot H2O Ext Oral Infusion Oral Decoction Oral Hot H2O Ext Oral Root External	Human Female Human Adult Human Adult Human Female Human Adult	A00115 K27077 K19153 W02855 T08016
Root Mozambique	Used to relieve menorrhagia. Used as an antiabortive.	Hot H2O Ext Oral Hot H2O Ext Oral	Human Female Human(pregnant)	L01568
Leaf Nepal	Used to treat boils and carbuncles.	Leaves External	Human Adult	K27040
Plant Juice Nepal	Used for indigestion and fever. Used to induce abortion.	Plant Juice Oral Juice Oral	Human Adult Human(pregnant)	K26239 K28451
Root Juice Nepal	Used to treat burning sensation while urinating. Used to treat swelling of gums.	Root Juice Oral Root External	Human Adult Human Adult	K25347 K25347
Leaf Nicaragua	Used for bites, stings and skin rashes. Used for fever and venereal disease.	Decoction External Decoction Oral	Human Adult Human Adult	K27070 K27070
Leaf + Root Nicaragua	Used for bites and stings, for skin rashes and sores. Used for fever and for venereal disease.	Decoction External Decoction Oral	Human Adult Human Adult	L16047 L16047
Root Nigeria	Used as a muscle relaxant, sedative, antirheumatic, antipyretic and analgesic.	Hot H2O Ext Oral	Human Adult	T06510
Root Nigeria	Used for menorrhagia. Used as an emmenagogue. Used as an abortifacient.	H2O Ext Oral H2O Ext Oral	Human Female Human(pregnant)	A04306

Plant Part / Location	Documented Ethnic Use	Type Extract / Route	Used For	Ref #
Root Paraguay	Said to be abortive. Used as an abortive. Used as an abortive.	Hot H2O Ext Oral Hot H2O Ext Oral Hot H2O Ext Oral	Human(pregnant) Human(pregnant) Human(pregnant)	A03500 L02292 T15375
Not Stated Paraguay	Used as an abortifacient. Used as an emmenagogue. Used as an abortifacient.	Not Stated Not Stated Oral Not Stated Oral	Human(pregnant) Human Female Human(pregnant)	J01423 J01423 W02705
Leaf Peru	Used for wounds.	Cataplasm External	Human Adult	ZZ1093
Leaf + Bark + Root Peru	Used as an aphrodisiac.	Tincture Oral	Human Adult	L04137
Root Peru	Used for anemia. Used as a febrifuge, expectorant, tonic and diuretic. Used as a cardiotonic and antianemic.	Decoction Oral Not Stated Oral Decoction Oral	Human Adult Human Adult Human Adult	ZZ1005 ZZ1093 ZZ1043
Seed Peru	Used to treat snakebite. Used as a diuretic. Used as a fish poison. Used for snakebite, as a diuretic, expectorant, febrifuge, piscicide, poison and for venereal disease.	Not Stated Not Stated Oral Seeds Not Stated Not Stated	Human Adult Human Adult Fish Human Adult	L04137 L04137 L04137 ZZ1041
Entire Plant Senegal	Used for diarrhea, enteralgia and blennorrhagia. Used for stomachache and diarrhea.	Hot H2O Ext Oral Decoction Oral	Human Adult Human Adult	M21947 M24038
Leaf Senegal	Used for conjunctivitis, syphilis, whooping cough and as an antiseptic. Used for conjunctivitis.	Hot H2O Ext Oral Leaves External	Human Adult Human Adult	M21947 M24038
Root Tanganyika	Used as a male sexual stimulant. Used as an emmenagogue.	Hot H2O Ext Oral Hot H2O Ext Oral	Human Male Human Female	A05825 A05825
Leaf Tanzania	Used against diarrhea. Used as an antimalarial.	Decoction Oral Decoction Oral	Human Child Human Adult	T10078 K25370
Root Tanzania	Used to treat malaria. Used to treat malaria. Used for malaria. Used as a CNS stimulant and for fainting. Used as an antipyretic.	Decoction Oral Decoction Oral Infusion Oral Root Oral Hot H2O Ext Oral	Human Adult Human Adult Human Adult Human Adult Human Adult	K25370 K15971 K23957 R00001 W3022A
Root Thailand	Used as a cardiotonic.	Root Oral	Human Adult	R00001

Plant Part / Location	Documented Ethnic Use	Type Extract / Route	Used For	Ref #
Root USA	Used as a laxative, diuretic and for irritation of urinary tract.	Hot H2O Ext Oral	Human Adult	W03968
Vine USA	Used to relieve symptoms associated with menstruation; to balance female hormones; for relief of inflammation of the testicles and for minor kidney problems.	Decoction Oral	Human Adult	ZZ1067
Leaf Pulp Upper Volta	Used as an abortive.	Plant Oral	Human(pregnant)	W00113
Root West Indies	Used for diabetes.	Hot H2O Ext Oral	Human Adult	T00701
Shoots West Indies	Tea of shoots used as a diuretic.	Hot H2O Ext Oral	Human Adult	T00701
Root Various	Used as a diuretic, expectorant and febrifuge. Used to prevent threatened abortion, to relieve menorrhagia, to arrest uterine hemorrhage and as an emmenagogue.	Not Stated	Human Adult Human Female	AP1001
Vine Various	Used as an antimalarial.	Not Stated	Human Adult	ZZ1050

Presence of Compounds in Abuta (Cissampelos pareira)

Compound	Chemical type	Plant Part	Plant Origin	Quantity	Ref #
Arachidic acid	Lipid	Root Root	India India	Not stated Not stated	W00767 W00770
Bebeerine, (DL):	Isoquinoline alkaloid	Root + Stem	India	00.15%	A05678
Beberine, (DL):	Isoquinoline alkaloid	Root + Stem	India	00.005%	A05678
Bulbocapnine	Isoquinoline alkaloid	Leaf + Stem	Pakistan	00.01333%	K29802
Chondodendrine, iso:	Isoquinoline alkaloid	Root Root + Stem Rootbark Root Root	Portugal India India Ghana Not stated	Not stated 00.20% Not stated Not stated Not stated	W00764 A05678 W00754 J09130 W00768
Chondodendrine, iso: (+):	Isoquinoline alkaloid	Root + Stem	India	Not stated	W00758
Cissamine	Isoquinoline alkaloid	Rootbark	India	00.229%	W01144
Cissampareine	Isoquinoline alkaloid	Entire plant	Peru	Not stated	A03934
Cissampelos pareira alkaloid A	Isoquinoline alkaloid	Rootbark	India	Not stated	W00754
Cissampelos pareira alkaloid B	Isoquinoline alkaloid	Rootbark	India	Not stated	W00754
Cissampelos pareira alkaloid C	Isoquinoline alkaloid	Rootbark	India	Not stated	W00754
Cissampelos pareira alkaloid D	Isoquinoline alkaloid	Rootbark	India	Not stated	W00754
Cissampelos pareira sterol (MP 140-141)	Steroid	Root Root	India India	Not stated Not stated	W00767 W00770
Corytuberine	Isoquinoline alkaloid	Leaf + Stem	Pakistan	00.01833%	K29802
Curine, (+):	Isoquinoline alkaloid	Root	India	00.33%	W00770

Compound	Chemical type	Plant Part	Plant Origin	Quantity	Ref #
Curine, (-):	Isoquinoline alkaloid	Rootbark	India	Not stated	W00754
		Root + Stem	India	01.2%	A05678
		Leaf	India	00.036%	W00752
		Rootbark	India	Not stated	W01144
		Root	Not stated	Not stated	W00768
		Root	Madagascar	Not stated	W00663
		Root + Stem	India	Not stated	W00758
Curine, (dl):	Isoquinoline alkaloid	Bark	China	Not stated	T03501
Curine, 4"-methyl: (+,+):	Isoquinoline alkaloid	Root + Stem	Jamaica	00.014%	W00762
Cyclanoline	Isoquinoline alkaloid	Root	India	Not stated	W00757
Cycleanine	Isoquinoline alkaloid	Root	India	Not stated	W01049
		Root	Ghana	Not stated	J09130
		Leaf	India	Not stated	W00752
Dicentrine	Isoquinoline alkaloid	Root	Ghana	Not stated	J09130
Dicentrine, dehydro:	Isoquinoline alkaloid	Root	Ghana	Not stated	J09130
Essential oil	Essential oil	Root	India	00.2%	W00770
Grandirubrine	Isoquinoline alkaloid	Root	Brazil	00.000675%	H12546
Hayatine	Isoquinoline alkaloid	Root	India	Not stated	W00767
		Root	India	Not stated	W00756
		Root	India	00.65%	W01315
		Rootbark	India	Not stated	W00754
		Root	India	Not stated	W00765
		Root	India	00.275%	W00770
		Root	Not stated	Not stated	W00768
		Leaf	India	Not stated	W00752
		Root	Madagascar	Not stated	W00663
		Root + Stem	India	Not stated	W00758

Compound	Chemical type	Plant Part	Plant Origin	Quantity	Ref #
Hayatinine	Isoquinoline alkaloid	Root	India	Not stated	W00755
		Root	India	Not stated	W01315
		Root	India	Not stated	W00756
		Rootbark	India	Not stated	W00754
		Root	India	00.0134%	W00770
		Leaf	India	Not stated	W00752
Imeluteine, nor:	Isoquinoline alkaloid	Root	Not stated	00.000078%	H12261
Insularine	Isoquinoline alkaloid	Root	Ghana	Not stated	J09130
Laudanosine	Isoquinoline alkaloid	Leaf + Stem	Pakistan	00.01583%	K29802
Linoleic acid	Lipid	Root	India	Not stated	W00767
		Root	India	Not stated	W00770
Magnoflorine	Isoquinoline alkaloid	Leaf + Stem	Pakistan	00.015%	K29802
Menismine	Isoquinoline alkaloid	Rootbark	India	00.039%	W01144
Merubrine, iso:	Isoquinoline alkaloid	Root	Brazil	00.000116%	H12546
Nuciferine	Isoquinoline alkaloid	Leaf + stem	Pakistan	00.01666%	K29802
Pareirine	Isoquinoline alkaloid	Rootbark	India	00.153%	W01144
Pareirubrine	Isoquinoline alkaloid	Entire plant	Brazil	Not stated	H12881
Pareirubrine A	Isoquinoline alkaloid	Root	Brazil	00.000155%	H12546
Pareirubrine B	Isoquinoline alkaloid	Root	Brazil	00.000078%	H12546
Pareitropone	Isoquinoline alkaloid	Root	South America	00.0004%	H17803
Quercitol, D:	Carbohydrate	Leaf	India	Not stated	W00752
		Root	India	00.643%	W00765
		Root	India	Not stated	W00770
		Root	India	Not stated	W00756
Ruffscine, nor:	Isoquinoline alkaloid	Root	Not stated	00.000077%	H12261
Stearic acid	Lipid	Root	India	Not stated	W00767
		Root	India	Not stated	W00770

Compound	Chemical type	Plant Part	Plant Origin	Quantity	Ref #
Tetrandrine, (+):	Isoquinoline alkaloid	Part Not Specified Root	Thailand Thailand	Not stated 00.825%	B00008 W00772
Tetrandrinium, dimethyl:	Isoquinoline alkaloid	Root	Thailand	00.00128%	W00771

OTHER PHYTOCHEMICAL SCREENING:

Alkaloids Present	Stem	T05143
	Leaf	T05143
	Leaf + Root	L16047
Pyrrolizidine Alkaloids Absent	Stem	T05143
	Leaf	T05143

Biological Activities for Extracts of *Abuta* (*Cissampelos pareira*)

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Leaf + Stem Jamaica	Toxicity Assessment (quantitative)	ETOH(95%)Ext	IP Mouse	1.0 ml			A03360
Leaf + Stem Jamaica	Toxicity Assessment (quantitative)	H2O Ext	IP Mouse	1.0 ml			A03360
Root Thailand	Toxic Effect (general)	ETOH-H2O (1:1) Ext	GI Mouse	10.0 gm/kg	Inactive	Dose expressed as dry weight of plant.	R00001
Root Thailand	Toxic Effect (general)	ETOH-H2O (1:1) Ext	SC Mouse	1.0 gm/kg	Inactive	Dose expressed as dry weight of plant.	R00001
Stem Brazil	Toxic Effect (general)	Hot H2O Ext	IV Rabbit	0.4 gm	Inactive		W01038
Stem Brazil	Respiration Inhibition Activity	Hot H2O Ext	IV Dog	0.4 gm	Active	Acceleration of respiratory rhythm followed by rhythm irregularity.	W01038
Not stated	Anti-implantation Effect	ETOH(95%)Ext	SC Rat	Not stated	Inactive		X01111
Leaf + Stem Jamaica	Uterine Relaxation Effect	ETOH(95%)Ext H2O Ext	Rat Rat	3.3 ml 3.3 ml	Weak Activity Weak Activity	Uterus (unspec.cond). Uterus(unspec.cond).	A03360
Not stated Malawi	Uterine Stimulant Effect	H2O Ext	Guinea Pig (female)	0.1 ml	Inactive	Uterus(estrog).	T09487
Not stated Argentina	Uterine Stimulant Effect	H2O Ext	Guinea Pig (female)	Not stated	Active	Uterus(unspec.cond)	A03467
Entire Plant Panama	Cytotoxic Activity	H2O Ext MECL2 Ext MEOH Ext	Cell Culture	Not stated	Inactive	Ca-human-colon-co-115.	M18404
Root South America	Cytotoxic Activity	MEOH Ext	Cell Culture	Not stated	Active	Leuk-p388.	H17803
Root Tanzania	Cytotoxic Activity	ETOAC Ext	Cell Culture	IC50=19. mcg/ml IC50=8.5 mcg/ml MIC=12.4 mcg/ml	Active Active Active	Ca-9kb. Human colon cancer HT29. Human colon cancer HT29.	K23957

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Root Mexico	Transcription Inhibition	ETOH(95%)Ext	Cell Culture	100.0 mcg/ml	Inactive	Ca-hela. Inhibited NF-kappa B activation.	L07398
Not stated	Antitumor Activity	Fraction	Not stated	Not stated	Active		AP1025
Not stated	Antileukemic Activity	Fraction	Not stated	Not stated	Active		AP1025
Not stated Japan	Antileukemic Activity	Fraction	Not stated	Not stated	Active		AP1002
Root Guatemala	Diuretic Activity	Decoction	NG Rat	1.0 gm/kg	Active		T15295
Root + Stem India-Madras	Diuretic Activity	Oral Rat	Not Stated	Not stated	Inactive		A05678
Stem Brazil	Cardiotonic Activity	Hot H2O Ext	Frog (heart)	Not stated	Active		W01038
Leaf + Stem Jamaica	Hypotensive Activity	ETOH(95%)Ext H2O Ext	IV Dog IV Dog	0.1 ml/kg 0.1 ml/kg	Active		A03360
Root Thailand	Hypotensive Activity	ETOH-H2O (1:1) Ext	IV Dog	Variable	Strong Activity		W3022A
Stem Brazil	Hypertensive Activity	Hot H2O Ext	IV Dog	0.36 gm	Active		W01038
Leaf + Stem Jamaica	Vasoconstrictor Activity	ETOH(95%)Ext	Rat	0.033 ml	Active	Hind quarter(isolated).	A03360
Root Mexico	Anti-inflammatory Activity	ETOH(95%)Ext	Not Stated	Not stated	Equiv.	In het-cam assay.	L07398
Leaf + Stem Jamaica	Smooth Muscle Relaxant Activity	ETOH(95%)Ext	Rabbit (duodenum)	0.33 ml/L	Active		A03360
Root Thailand	Antispasmodic Activity	ETOH-H2O (1:1) Ext	Guinea Pig (ileum)	0.001 gm/ml	Active		W3022A
Leaf + Stem Jamaica	Spasmolytic Activity	ETOH(95%)Ext H2O Ext	Guinea Pig IP Guinea Pig	0.1 ml/L 0.1 ml/L	Active Active	(ileum)	A03360
Leaf + Root + Stem Mexico	Antioxidant Activity	CHCL3-MEOH (3:2) Ext	Not Stated	Not stated	Active	vs. DPPH. vs. bleaching of beta-carotene.	L15716
Root India	Antihyperglycemic Activity	Hot H2O Ext	GI Rabbit	5.0 gm	Weak Activity		T03612
Root India	Hypoglycemic Activity	Hot H2O Ext	GI Rabbit	5.0 gm	Weak Activity		T03612

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Root Thailand	Antihistamine Activity	ETOH-H2O (1:1) Ext	Guinea Pig (ileum)	0.001 gm/ml	Active		W3022A
Leaf Nigeria	Antiulcer Activity	MEOH Ext	IG Mouse	100.0 mg/kg	Active		L11721
Root Mexico	Fibrinolytic Activity	ETOH(95%)Ext	Agar Plate	25.0 mcg	Active	vs. <i>Cladosporium cucumerinum</i> in hepatic cells.	K19153
Stem Brazil	Skeletal Muscle Stimulant Activity	Hot H2O Ext	Rabbit	0.04 gm	Inactive		W01038
Not stated	Neuromuscular Activity	Not stated	Not stated	Not stated	Active	Neuromuscular blocking action.	ZZ1038
Root Nigeria	CNS Depressant Activity	ETOH(70%)Ext	IP Mouse	Variable	Active		T06510
Not stated	CNS Stimulant Activity	Not stated	Not stated	Not stated	Active		AP1004
Root Nigeria	Anticonvulsant Activity	ETOH(70%)Ext	IP Mouse	Variable	Active	vs. metrazole- and strychnine-induced convulsions.	T06510
Stem Brazil	Neuroleptic Activity	Hot H2O Ext	Frog Nerve (sciatic)	Not stated	Inactive		W01038
Root Not stated	Antimalarial Activity Antimalarial Activity Antimalarial Activity Antimalarial Activity Antimalarial Activity	CHCL3 Ext CHCL3 Ext H2O Ext H2O Ext H2O Ext	Oral Chicken SC Duckling Oral Chicken Oral Duckling Oral Duckling	572.0 mg/kg 282.0 mg/kg 1.20 gm/kg 1.52 gm/kg 1.52 gm/kg	Active Active Active Inactive Inactive	<i>Plasmodium gallinaceum</i> <i>Plasmodium cathemerium</i> <i>Plasmodium gallinaceum</i> <i>Plasmodium cathemerium</i> <i>Plasmodium lophurae</i>	A00785
Root Tanzania	Antimalarial Activity	ETOAC Ext	Not Stated	ED50: 10.38 mcg/ml	Active	<i>Plasmodium falciparum</i>	K15971
Root Tanzania	Antimalarial Activity	ETOAC Ext	IG Mouse	500.0 mg/kg	Active	58.5% suppression of parasitemia.	K23957
Root Tanzania	Antimalarial Activity	ETOH(95%)Ext H2O Ext Pet Ether Ext	Not Stated Not Stated Not Stated	ED50=1.3 mcg/ml ED50=1.2 mcg/ml ED50=8.0 mcg/ml	Active Active Active	<i>Plasmodium falciparum</i> <i>Plasmodium falciparum</i> <i>Plasmodium falciparum</i>	K15971
Leaf Nigeria	Antibacterial Activity	MEOH Ext	Agar Plate	100.0 mg/ml	Active	<i>Escherichia coli</i> <i>Klebsiella pneumoniae</i> <i>Pseudomonas aeruginosa</i> <i>Salmonella typhi</i> <i>Staphylococcus aureus</i>	L11721

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Root India	Antibacterial Activity	ETOH(95%)Ext ETOH(95%)Ext Hot H2O Ext Hot H2O Ext	Agar Plate Agar Plate Agar Plate Agar Plate	Undiluted Undiluted Undiluted Undiluted	Active Active Active Inactive	<i>Escherichia coli</i> <i>Staphylococcus aureus</i> <i>Escherichia coli</i> <i>Staphylococcus aureus</i>	W03693
Bark India	Antibacterial Activity	ETOH(95%)Ext	Agar Plate	20.0%	Weak Activity	<i>Escherichia coli</i> <i>Klebsiella species</i> <i>Shigella boydii</i> <i>Shigella dysenteriae</i> <i>Shigella flexneri</i> <i>Shigella sonnei</i> <i>Vibrio cholera</i>	L13625
Leaf + Stem India	Antibacterial Activity	ETOH(80%)Ext ETOH(80%)Ext ETOH(80%)Ext ETOH(80%)Ext	Agar Plate Agar Plate Agar Plate Agar Plate	12.5 mg/ml 25.0 mg/ml 25.0 mg/ml 25.0 mg/ml	Equiv. Equiv. Equiv. Equiv.	<i>Bacillus subtilis</i> <i>Escherichia coli</i> <i>Pseudomonas aeruginosa</i> <i>Staphylococcus aureus</i>	L15872
Leaf + Root + Stem Mexico	Antibacterial Activity	CHCL3-MEOH (3:2) Ext	Agar Plate	Not stated	Active Inactive Inactive Inactive	<i>Staphylococcus aureus</i> <i>Bacillus subtilis</i> <i>Escherichia coli</i> <i>Pseudomonas aeruginosa</i>	L15716
Leaf Guatemala	Antibacterial Activity	ETOH-H2O (50%)Ext	Agar Plate	50.0 microliters	Inactive	<i>Escherichia coli</i> <i>Salmonella enteritidis</i> <i>Salmonella typhosa</i> <i>Shigella dysenteriae</i> <i>Shigella flexneri</i>	K24899
Root Argentina	Antibacterial Activity	Decoction	Agar Plate	Not stated	Inactive	<i>Pseudomonas aeruginosa</i>	K17523
Root Argentina	Antibacterial Activity	Hot H2O Ext	Agar Plate	62.5 mg/ml	Inactive	<i>Escherichia coli</i> <i>Staphylococcus aureus</i>	K14683
Root + Twig Argentina	Antibacterial Activity	H2O Ext	Agar Plate	1.0 mg/ml	Inactive	<i>Salmonella typhi</i>	J11153
Root Mexico	Antibacterial Activity	ETOH(95%)Ext	Agar Plate Agar Plate Agar Plate	10.0 mcg 20.0 mcg 20.0 mcg	Inactive Inactive Inactive	<i>Bacillus subtilis</i> <i>Escherichia coli</i> <i>Micrococcus luteus</i>	K19153
Bark India	Antimycobacterial Activity	ETOH(95%)Ext	Agar Plate	Not stated	Inactive	<i>Mycobacterium tuberculosis</i>	W00143
Root Mexico	Antiamebic Activity	ETOH(95%)Ext	Not Stated	MIC=>250 mcg/ml	Inactive	<i>Entamoeba histolytica</i>	K19153
Root Mexico	Antifungal Activity	ETOH(95%)Ext	Agar Plate	30.0 mcg	Inactive	<i>Penicillium oxalicum</i>	K19153

Plant Part - Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Leaf Nigeria	Antifungal Activity	MEOH Ext	Agar Plate	100.0 mg/ml	Inactive	<i>Aspergillus niger</i>	L11721
Root Argentina	Antifungal Activity	Hot H2O Ext	Agar Plate	62.5 mg/ml	Inactive	<i>Aspergillus niger</i>	K14683
Root Guatemala	Antiyeast Activity	ETOH(60%)Ext	Agar Plate	Not stated	Inactive	<i>Candida albicans</i>	M31296
Leaf Nigeria	Antiyeast Activity	MEOH Ext	Agar Plate	100.0 mg/ml	Inactive	<i>Candida albicans</i>	L11721
Leaf + Root + Stem Mexico	Antiyeast Activity	CHCL3-MEOH (3:2) Ext	Agar Plate	Not stated	Inactive	<i>Candida albicans</i> <i>Saccharomyces cerevisiae</i>	L15716
Not stated	Insecticide Activity	H2O Ext H2O Ext	Variable Variable	Not stated 40.0 ml/kg	Inactive Weak Activity	<i>Blatella germanica</i> <i>Periplaneta americana</i>	W03405
Entire Plant Puerto Rico	Molluscicidal Activity	Aqueous slurry (homogenate)	Not Stated	LD100= >1000 ppm	Inactive	<i>Lymnaea columella</i> <i>Lymnaea cubensis</i>	T04621
Leaf + Root + Stem Mexico	Beta-glucosidase Inhibition	CHCL3-MEOH (3:2) Ext	Not Stated	Not stated	Active		L15716

Biological Activities for Compounds of Abuta (Cissampelos pareira)

(Please note: The following is just a representation of some of the published research on compounds in Abuta. Over 400 clinical studies have been published on various alkaloid compounds naturally found in Abuta, including those compounds shown below)

Compound Tested	Activity Tested For	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Total Alkaloids	Toxicity Assessment (quantitative)	IV Mouse	50.0 mg/kg	Not Stated		W00803
Total Alkaloids	Respiratory Depressant	IV Cat	2.0 mg/kg	Weak Activity		W00803
Pareirubrine A & B	Antileukemic Activity	Not stated	Not stated	Active		H12546
Grandirubrine	Antileukemic Activity	Not stated	Not stated	Active		H12546
Isoimerubrine	Antileukemic Activity	Not stated	Not stated	Active		H12546
Tetrandrine	Antileukemic Activity	Cell Culture	2.5 mcg/ml	Active	Human leukemic U937 cells.	AP1022
Tetrandrine	Antileukemic Activity	Cell Culture	Not stated	Active	Human leukemic HL-60 cells.	AP1023
Tetrandrine	Cytotoxic Activity	Not stated	Not stated	Active	Walker carcinoma 256; ehrlich ascites carcinoma and SA; KB; HeLa; various liver carcinoma strains; lung tumor.	AP1024
Cissampereine	Cytotoxic Activity	Not stated	Not stated	Active		AP1005
Tetrandrine	Cytotoxic Activity	Cell Culture	Not stated	Active Inactive	Malignant lymphoid and myeloid cells. Epstein-Barr virus-transformed lymphoblastoid cells.	AP1006
Dicentrine	Cytotoxic Activity	Cell Culture	Not stated	Active	Several mouse tumor cell lines, leukemia P388 and L1210, melanoma B16, bladder cancer MBC2 and colon cancer colon 26.	AP1012
Tetrandrine	Cytotoxic Activity	Cell Culture	IC50=9 mcM	Active	Human hepatoma cell HepG2 cells.	AP1015
Tetrandrine	Cytotoxic Activity	Mice	2.5 micromol/L	Active	vs. MCF-7/ADR cell xenografts. Inhibited P-glycoprotein mediated multidrug resistance. Potentiated the cytotoxicity of doxorubicin, reversing resistance by 20.4-fold.	AP1016

Compound Tested	Activity Tested For	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Tetrandrine	Cytotoxic Activity	Cell Culture	10 mumol/L	Active	Reversed adriamycin and vincristine resistance in resistant MCF-7/Adr and KBv200 cell lines.	AP1017
Tetrandrine	Cytotoxic Activity	Mice	Not stated	Active	Reversed adriamycin resistance in multi-drug resistant MCF-7/Adr solid tumor.	AP1017
Tetrandrine	Cytotoxic Activity	Cell Culture	5 and 7.5 eg/ml	Active	Enhanced the growth-inhibiting effect of radiation in human glioblastoma U128MG cells. Eliminated the cell cycle perturbation induced by radiation.	AP1020
Berberine	Cytostatic Activity	Cell Culture	Not stated	Active	Macrophage activation resulted in their cytostatic activity against tumor cells.	ZZ1010
Tetrandrine	Anti-tumor Activity	Not stated	Not stated	Active		AP1005
Berberine	Antitumor Activity	Cell Culture	150 mcg/ml	Active	6 human malignant brain tumor cell lines and rat 9L brain tumor cells. Berberine showed an average cell kill of 91%.	ZZ1010
Berberine	Antitumor Activity	Rat	10 mg/kg	Active	81% cell kill.	ZZ1010
Berberine	Antitumor-Promoting Activity	Mice	Not stated	Active	Inhibited the effects of tumor promoters 12-O-tetradecanoylphorbol-13-acetate and teleocidin.	ZZ1010
Berberine	Antitumor-Promoting Activity	Mice	Not stated	Active	Inhibited the promoting effect of teleocidin on skin tumor formation.	ZZ1010
Alkaloid fraction	Analgesic Activity	Oral Mouse	500.0 mg/kg	Inactive		A05678
Tetrandrine	Analgesic Activity	Not stated	Not stated	Active		AP1024
Berberine	Antinociceptive Activity	Oral Mice	Not stated	Active	vs. p-benzoquinone-induced writhing movements.	AP1013
Tetrandrine	Anti-inflammatory Activity	Cell Culture	5 mcg/mL	Active	Suppressed nitric oxide production for 48 hours.	AP1003
Tetrandrine	Anti-inflammatory Activity	Cell Culture	0.1-5 mcg/ml	Active	Inhibited the capacity of monocytes to produce TNF-alpha.	AP1008

Compound Tested	Activity Tested For	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Tetrandrine	Anti-inflammatory Activity	Cell Culture	Not stated	Active	Suppression of prostaglandin generation. Inhibition of histamine release, platelet-activating-factor and interleukin 1.	AP1009
Berberine	Anti-inflammatory Activity	Oral and Topical Mice	Not stated	Active Active	vs. serotonin-induced hind paw edema. vs. acetic acid-induced increase in vascular permeability.	AP1013
Tetrandrine	Anti-inflammatory Activity	Mouse	Not stated Not stated 12.5 microM 6 microM	Active Inactive Active Active	vs. croton-induced mouse ear edema. Cyclooxygenase inhibition. 95% inhibition of murine IL-5 activity. 86% inhibition of human IL-6 activity.	AP1019
Corytuberine	Lipoxygenase Inhibitory Activity	Not stated	Not stated	Active		AP1011
Berberine	Lipoxygenase Inhibitory Activity	Not stated	Not stated	Weak Activity		AP1011
Magnoflorine	Lipoxygenase Inhibitory Activity	Not stated	Not stated	Weak Activity		AP1011
Total Alkaloids	Smooth Muscle Relaxant Activity	Cat	1-99 M	Active	Intestine (small)	W00803
Total Alkaloids	Smooth Muscle Relaxant Activity	IV Cat	1.5 mg/kg	Active	Intestine (small)	W00803
Total Alkaloids	Uterine Relaxation Effect	Cat (female)	1-99 M	Active	Uterus (non-preg).	W00803
Total Alkaloids	Uterine Relaxation Effect	IV Cat (female)	3.0 mg/kg	Weak Activity	Uterus (non-preg).	W00803
Total Alkaloids	Uterine Stimulant Effect	Cat (female)	1-99 M	Inactive	Uterus (non-preg).	W00803
Total Alkaloids	Uterine Stimulant Effect	IV Cat (female)	1.0 mg/kg	Inactive	Uterus (non-preg).	W00803
Berberine	Antipyretic Activity	Oral Mice	Not stated	Active	vs. FCA-induced increased rectal temperature.	AP1013
Tetrandrine	Immunosuppressive Activity	Mice	Not stated	Active	Caused suppression of delayed-type hypersensitivity responses to sheep red blood cell antigens.	AP1007

Compound Tested	Activity Tested For	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Tetrandrine	Immunosuppressive Activity	Cell Culture	Not stated	Active	Inhibited CD28-costimulated T-cell proliferation and cytokine production. Down-regulated T helper 1 and T helper 2 cytokine production in CD4+ and CD8+ T-cell subpopulations.	AP1021
Dauricine	Immunosuppressive Activity	Cell Culture	Not stated	Active	Inhibited CD28-costimulated T-cell activities.	AP1021
Berberine	Immunostimulant Activity	Cell Culture	Not stated	Active	Activation of macrophages.	ZZ1010
Berberine	Antimicrobial Activity	Agar Plate	Not stated	Active		ZZ1010
Berberine	Antibacterial Activity	Agar Plate	Not stated	Active	<i>Streptococci</i>	ZZ1010
Berberine	Antiparasitic Activity	Human Child	10 mg/kg	Active	After 10 days, 90% of the berberine treated <i>giardia</i> patients had negative stool cultures compared to 95% of the metronidazole group.	ZZ1010
Tetrandrine	Antimalarial Activity	Agar Plate	IC50=5.09 x 10(-7) M IC50=1.51 x 10(-7) M	Active Strong Activity	<i>Plasmodium falciparum</i> chloroquine sensitive. <i>Plasmodium falciparum</i> chloroquine resistant.	AP1010
Berberine	Antifungal Activity	Agar Plate	10-25 mcg/ml	Active	<i>Candida albicans</i> 10 other fungi.	ZZ1010
Total Alkaloids	Bradycardia Activity	IV Cat	2.5 mg/kg	Active		W00803
Tetrandrine	Calcium Channel Blocker	Cell Culture	Not stated	Active		AP1014
Tetrandrine	Antifibrotic Activity	Rat	10 mg/kg	Active	In liver fibrosis reduced serum aspartate aminotransferase, alanine aminotransferase and alkaline phosphatase levels to 72%, 52% and 51% of controls.	AP1018
Total Alkaloids	Diuretic Activity	IV Cat	2.0 mg/kg	Inactive		W00803
Alkaloid fraction	CNS Depressant Activity	Oral Mouse	500.0 mg/kg	Weak Activity		A05678

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A00449	THE INDIAN PHARMACEUTICAL CODEX. VOLUME I-INDIGENOUS DRUGS. COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH, NEW DELHI, INDIA. MUKERJI,B: BOOK : - (1953) (CENTRAL DRUG RES INST LUCKNOW UP INDIA)
A00455	SUBSIDIO PARA O ESTUDO DA FLORA MEDICINAL DA GUINEA PORTUGUESA. AGENCIA-GERAL DO ULTRAMAR,LISBOA,1959. ALVARO VIERA,R: BOOK : - (1959) (NO ADDRESS GIVEN)
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A00710	FLORA MEDICINAL DE COLOMBIA. VOL. 1. UNIVERSIDAD NACIONAL, BOGOTA. GARCIA-BARRIGA,H: BOOK : - (1974) (SEC BOTANICA INST DE CIENC NAT UNIV NAEL COLOMBIA BOGOTA COLOMBIA)
A00785	SURVEY OF PLANTS FOR ANTIMALARIAL ACTIVITY. SPENCER,CF: KONIUSZY,FR: ROGERS,EF: SHAVEL JR,J: EASTON,NR: KACZKA,EA: KUEHL JR,FA: PHILLIPS,RF: WALTJ,A: FOLKERS,K: MALANGA,C: SEELER,AO: LLOYDIA 10 : 145-174 (1947) (RES LAB MERCK + CO,INC RAHWAY NJ USA)
A03360	PHARMACOLOGICAL SCREENING OF SOME WEST INDIAN MEDICINAL PLANTS. FENG,PC: HAYNES,LJ: MAGNUS,KE: PLIMMER,JR: SHERRAT,HSA: J PHARM PHARMACOL 14 : 556-561 (1962) (UNIV COLL WEST INDIES KINGSTON 7 JAMAICA)
A03467	ACTION OF SEVERAL POPULAR MEDICAMENTS ON THE ISOLATED UTERUS. MORENO,MSF: C R SEANCES SOC BIOL SES FIL 87 : 563-564 (1922) (INST PHYSIOL FAC MED BUENOS AIRES ARGENTINA)
A03479	NATIVE MEDICINAL AND POISONOUS PLANTS OF EAST AFRICA. BALLY,PRO: BULL MISC INFORMATION ROY BOT GARD 1 1: 10-26 (1937) (NO ADDRESS GIVEN)
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A03934	TUMOR INHIBITORS VI. CISSAMPAREINE, NEW CYTOTOXIC ALKALOID FROM CISSAMPELOS PAREIRA. CYTOTOXICITY OF BISBENZYLISOQUINOLINE ALKALOIDS. KUPCHAN,SM: PATEL,AC: FUJITA,E: J PHARM SCI 54 : 580- (1965) (DEPT PHARM CHEM SCH PHARM UNIV WISCONSIN MADISON WI 53706 USA)
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B00008	THE ISOLATION AND CHARACTERIZATION OF BISBEZYLISOQUINOLINE ALKALOID "TETRANDRINE" FROM THE ROOT OF CISSAMPELOS PAREIRA L. ROJANASONTHORN,G: THESIS-MASTER-DEPARTMENT OF CHEMISTRY, FACULTY OF SCIENCE, MAHIDOL UNIVERSITY, BANGKOK, THAILAND, 1970, 41 P. : 41-. (1970)(DEPT CHEM FAC SCI MAHIDOL UNIV BANGKOK THAILAND)
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H12546	STRUCTURES AND SOLID STATE TAUTOMERIC FORMS OF TWO NOVEL ANTILEUKEMIC TROPOLOISOQUINOLINE ALKALOIDS, PAREIRUBRINES A AND B, FROM CISSAMPELOS PAREIRA. MORITA,H: MATSUMOTO,K: TAKEYA,K: ITOKAWA,H: IITAKA,Y: CHEM PHARM BULL 41 8: 1418-1422 (1993) (TOKYO COLL PHARM TOKYO 192-03 JAPAN)
H12881	A NOVEL ANTILEUKEMIC TROPOLOISOQUINOLINE ALKALOID, PAREIRUBRINE, FROM CISSAMPELOS PAREIRA. MORITA,H: MATSUMOTO,K: TAKEYA,K: ITOKAWA,H: IITAKA,Y: CHEM LETT 1993 2: 339-342 (1993) (TOKYO COLL PHARM TOKYO 192-03 JAPAN)
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J11153	IN VITRO ANTIBACTERIAL ACTIVITY OF ARGENTINE FOLK MEDICINAL PLANTS AGAINST SALMONELLA TYPHI. PEREZ,C: ANESINI,C: J ETHNOPHARMACOL 44 1: 41-46 (1994) (CATEDRA FARMA FAC ODONTOLOGIA UNIV BUENOS AIRES BUENOS AIRES ARGENTINA)
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K15971	SCREENING TANZANIAN MEDICINAL PLANTS FOR ANTIMALARIAL ACTIVITY. GESSLER,MC: NKUNYAK,MHH: MWASUMBI,LB: HEINRICH,M: TANNER,M: ACTA TROPICA 56 1: 65-77 (1994) (DEPT PUBLIC HEALTH EPIDEMIOLOG SWISS TROP INST BASEL CH 4002 SWITZERLAND)
K16948	MEDICINAL PLANTS USED IN SOME RURAL POPULATIONS OF OAXACA, PUEBLA AND VERACRUZ, MEXICO. ZAMORA-MARTINEZ,MC: POLA,CNP: J ETHNOPHARMACOL 35 3: 229-257 (1992) (CENT INV FOREST AGROP DIS FED MEXICO 04110 MEXICO)
K17523	INHIBITION OF PSEUDOMONAS AERUGINOSA BY ARGENTINEAN MEDICINAL PLANTS. PEREZ,C: ANESINI,C: FITOTERAPIA 65 2: 169-172 (1994) (CAT FARMACOL FAC ODONTOL UNIV BUENOS AIRES BUENOS AIRES ARGENTINA)

K19153	PARASITOLOGICAL AND MICROBIOLOGICAL EVALUATION OF MIXE INDIAN MEDICINAL PLANTS (MEXICO). HEINRICH,M: KUHN,M: WRIGHT,CW: RIMPLER,H: PHILLIPSON,JD: SCHANDELMAIER,A: WARHURST,DC: J ETHNOPHARMACOL 36 1: 81-85 (1992) (INST PHARM BIOL UNIV SCHANZLESTR FREIBURG D7800 GERMANY)
K23156	TRADITIONAL PHYTOTHERAPY OF SOME MEDICINAL PLANTS USED BY THE THARUS OF THE NAINITAL DISTRICT, UTTAR PRADESH,INDIA. SINGH,KK: MAHESHWARI,JK: INT J PHARMACOG 32 1: 51-58 (1994) (ETHNOBO DIS NATL BOT RES INST LUCKNOW INDIA)
K23294	TRADITIONAL PLANT REMEDIES AMONG THE KONDH OF DISTRICT DHENKANAL (ORISSA). GIRACH,RD: AMINUDDIN: SIDDIQUI,PA: KHAN,SA: INT J PHARMACOG 32 3: 274-283 (1994) (SURVEY MED PLANTS UNIT REG RES INST UNANI MED BHADRAK 756 INDIA)
K23824	FOLK MEDICINES IN PRIMARY HEALTH CARE: COMMON PLANTS USED FOR THE TREATMENT OF FEVERS IN INDIA. SINGH,VK: ALI,ZA: FITOTERAPIA 65 1: 68-74 (1994) (DEPT BOTANY SURVEY MED PLANTS ALIGARH MUSLIM UNIV ALIGARH 202002 INDIA)
K23957	TANZANIAN MEDICINAL PLANTS USED TRADITIONALLY FOR THE TREATMENT OF MALARIA: IN VIVO ANTIMALARIAL AND IN VITRO CYTOTOXIC ACTIVITIES. GESSLER,MC: TANNER,M: CHOLLET,J: NKUNYA,NHH: HEINRICH,M: PHYTOTHER RES 9 7: 504-508 (1995) (DEPT PUBLIC HEALTH EPIDEMIOLOG SWISS TROP INST BASEL SWITZERLAND)
K24899	PLANTS USED IN GUATEMALA FOR THE TREATMENT OF GASTROINTESTINAL DISORDERS. 1. SCREENING OF 84 PLANTS AGAINST ENTEROBACTERIA. CACERES,A: CANO,O: SAMAYOA,B: AGUILAR,L: J ETHNOPHARMACOL 30 1: 55-73 (1990) (CEMT APARTADO POSTAL 01001 GUATEMALA)
K25347	HERBAL REMEDIES OF SURKHET DISTRICT, NEPAL. MANANDHAR,NP: FITOTERAPIA 64 3: 266-272 (1993) (NATL HERBARIUM PLANT LAB LATITPUR NEPAL)
K25370	TRADITIONAL HEALERS IN TANZANIA: THE TREATMENT OF MALARIA WITH PLANT REMEDIES. GESSLER,MC: MYSUYA,DE: NKUNYA,MHH: MWASUMBI,LB: SCHAR,A: HEINRICH,M: TANENR,M: J ETHNOPHARMACOL 48 3: 131-144 (1995) (DEPT PUBL HEALTH EPIDEMIOLOG SWISS TROP INST BASEL SWITZERLAND)
K25403	A CONTRIBUTION TO THE ETHNOPHARMACOLOGICAL STUDY OF THE UDAIPUR FORESTS OF RAJASTHAN, INDIA. SINGH,VK: ALI,ZA: FITOTERAPIA 63 2: 136-144 (1992) (SURVEY MED PLANTS UNIT ALIGARH MUSLIM UNIV ALIGARH 202002 INDIA)
K25892	ANTISNAKE VENOM BOTANICALS FROM ETHNOMEDICINE. SELVANA YAHGAM,ZE: GNANEVENDHAN,SG: BALAKRISHNA,K: RAO,RB: J HERBS SPICES MED PLANTS 2 4: 45-100 (1994) (FORENSIC SCI DEPT MADRAS 600 004 INDIA)
K26099	MEDICINAL PLANTS OF WIDE USE IN INDIA WITH SPECIAL REFERNCE TO SITAPUR DISTRICT (UTTAR PRADESH). SIDDIQUI,MB: HUSAIN,W: FITOTERAPIA 65 1: 3-6 (1994) (DEPT BOT ALIGARH MUSLIM UNIV ALIGARH 202002 INDIA)
K26239	AN ETHNOBOTANICAL SURVEY OF HERBAL DRUGS OF KASKI DISTRICT, NEPAL. MANANDHAR,NP: FITOTERAPIA 65 1: 7-13 (1994) (NATL HERBARIUM PLANT LAB LALIPUR NEPAL)
K26667	ETHNOBOTANICAL OBSERVATIONS ON IRULARS OF TAMIL NADU (INDIA). RAMACHANDRAN,VS: NAIR,NC: J ECON TAX BOT 2 : 183-190 (1981) (BOT SURVEY INDIA COIMBATORE 641 003 INDIA)

K26725	FOLK MEDICINES OF THE MORENA DISTRICT, MADHYA PRADESH, INDIA. SIKARWAR,RLS: KAUSHIK,JP: INT J PHARMACOG 31 4: 283-287 (1993) (SCH STUDIES ZOOLOGY JIWAJI UNIV GWALIOR MP 474 002 INDIA)
K26734	ETHNOMEDICINES IN THE BAHRAICH DISTRICT OF UTTAR PRADESH, INDIA. SINGH,VK: ALI,ZA: SIDDIQUI,MK: FITOTERAPIA 67 1: 65-76 (1996) (DEPT BOT ALIGARH MUSLIM UNIV ALIGARH 202002 INDIA)
K26968	MEDICAL ETHNOBOTANY OF PLANTS USED AS ANTIDOTES BY YANADI TRIBES IN SOUTH INDIA. SUDARSANAM,G: PRASAD,GS: J HERBS SPICES MED PLANTS 3 1: 57-66 (1995) (DEPT BOTANY DIV PLANT DRUG RES S V UNIV TIRUPATI 517 502 INDIA)
K27040	MEDICAL ETHNOBOTANY IN THE RAPTI ZONE, NEPAL. BHATTARAI,NK: FITOTERAPIA 64 6: 483-493 (1993) (DPET FOREST PLANT RES NALT HERB PLANT LAB KATHMANDU NEPAL)
K27070	ETHNOBOTANY OF THE GARIFUNA OF EASTERN NICARAGUA. COEE,FG: ANDERSON,GJ: ECON BOT 50 1: 71-107 (1996) (SCH PHARM UNIV CONNECTICUT STORRS CT 06268 USA)
K27075	HERBAL FOLK REMEDIES OF MORNH HILLS (HARYANA), INDIA. SINGH,V: FITOTERAPIA 66 5: 425-430 (1995) (BOTANICAL SCI REGIONAL RES LAB JAMMU 180 001 INDIA)
K27077	INDIGENOUS PHYTOTHERAPY OF GASTROINTESTINAL DISORDERS IN A LOWLAND MIXE COMMUNITY (OAXACA, MEXICO): ETHNOPHARMACOLOGIC EVALUATION. HEINRICH,M: RIMPLER,H: BARRERA,NA: J ETHNOPHARMACOL 36 1: 63-80 (1992) (IST PHARM BIOL ALBERT LUDWIGS UNIV FREIBURG GERMANY)
K27338	FIELD NOTES ON CURARE CONSTITUENTS IN THE NORTHWEST AMAZONIA. SCHULTES,RE: RAFFAUF,RF: CURARE 13 : 105-120 (1990) (BOTANICAL MUSEUM HARVARD UNIV CAMBRIDGE MA 02138 USA)
K27454	ETHNOMEDICINAL USES OF PLANTS OF GONDA DISTRICT FORESTS OF UTTAR PRADESH, INDIA. SINGH,VK: ALI,ZA: ZAIDI,STH: SIDDIQUI,MK: FITOTERAPIA 67 2: 129-139 (1996) (DEPT BOTANY ALIGARH MUSLIM UNIV ALIGARH 202002 INDIA)
K28434	MEDICINAL PLANTS OF TWO MAYAN HEALERS FROM SAN ANDRES, PETEN, GUATEMALA. COMERFORD,SC: ECON BOT 50 3: 327-336 (1996)(DEPT ECOL EVOLUTION ORG BIOL TULANE UNIV NEW ORLEANS LA 70118 USA)
K28451	ETHNOBOTANY OF THE THARU TRIBE OF CHITWAN DISTRICT, NEPAL. DANGOL,DR: GURUNG,SB: INT J PHARMACOG 29 3: 203-209 (1991)(DEPT AGR BOT INST AGR ANIMAL SCI RAMPUR NEPAL)
K29802	ALKALOIDS OF CISSAMPELOS PAREIRA. AHMAD,R: MALIK,MA: ZIA-UL-HAQ,M: FITOTERAPIA 63 3: 282-. (1992) (DEPT CHEM QUAID-AZAM UNIV ISLAMABAD PAKISTAN)
L01568	MEDICINAL PLANTS OF SOUTHERN ZAMBESIA. AMICO,A: FITOTERAPIA 48 : 101-139 (1977) (INST BOTANY UNIV BARI BARI ITALY)
L02292	PLANTS USED AS MEANS OF ABORTION, CONTRACEPTION, STERILIZATION AND FECUNDATION BY PARAGUAYAN INDIGENOUS PEOPLE. ARENAS,P: MORENO-AZORERO,R: ECON BOT 31 : 302-306 (1977) (INST CIENC BASICAS UNIV NAC ASUNCION CIUDAD UNIV SAN LORENZO PARAGUAY)

L02535	MEDICAL BOTANY.WILEY-INTERSCIENCE,NEW YORK(1977). LEWIS,WH: ELVIN-LEWIS,MPF: BOOK : - (1977) (BOTANY DEPT WASHINGTON UNIV ST LOUIS MO USA)
L02963	ETHNOBOTANICAL OBSERVATION AMONG JAUNSAARIS OF JAUNSAAR-BAWAR, DEHRA DUN (J.P.), INDIA. RANA,TS: DATT,B: INT J PHARMACOG 35 5: 371-374 (1997) (NATIONAL BOTANICAL RES INST LUCKNOW UP 226 001 INDIA)
L04137	AMAZONIAN ETHNOBOTANICAL DICTIONARY. DUKE,JA: BOOK : 181- (1994) (USA)
L07398	SESQUITERPENE LACTONE CONTAINING MEXICAN INDIAN MEDICINAL PLANTS AND PURE SESQUITERPENE LACTONES AS POTENT INHIBITORS OF TRANSCRIPTION FACTOR NF-KB. BORK,PM: SCHMITZ,ML: KUHN,M: ESCHER,C: HEINRICH,M: FEBS LETT 402 1: 85-90 (1997)(INST PHARMACEUT BIOL ALBERT-LUDWIGS UNIV FREIBURG 79104 GERMANY)
L11721	STUDIES ON ANTI-ULCER PROPERTIES OF CISSAMPELOS MUCRONATA LEAF EXTRACT. AKAH,PA: NWAFOR,SV: INDIAN J EXP BIOL 37 9: 936-938 (1999) (DEPT PHARM TOXICOL UNIV NIGERIA NSUKKA NIGERIA)
L13625	MICROBIOLOGICAL SCREENING OF INDIAN MEDICINAL PLANTS WITH SPECIAL REFERENCE TO ENTEROPATHOGENS. VIJAYA,K: ANANTHAN,S: J ALTERN COMPL MED 3 1: 13-20 (1997) (DEPT MICROBIOLOGY MADRAS INDIA)
L15716	EVALUATION OF BIOLOGICAL ACTIVITY OF CRUDE EXTRACTS FROM PLANTS USED IN YUCATECAN TRADITIONAL MEDICINE PART I. ANTIOXIDANT, ANTIMICROBIAL AND BETA-GLUCOSIDASE INHIBITION ACTIVITIES. SANCHEZ MEDINA,A: GARCIA SOSA,K: MAY PAT,F: PENA RODRIGUEZ,LM: PHYTOMEDICINE 8 2: 144-151 (2001) (GRUPO QUIMICA ORGANICA UNIDAD BIOTECNOLOGIA YUCATAN MEXICO)
L15872	ANTIMICROBIAL SCREENING OF SELECTED MEDICINAL PLANTS FROM INDIA. VALSARAJ,R: PUSHANGADAN,P: SMITT,UW: ADSERSEN,A: NYMAN,U: J ETHNOPHARMACOL 58 2: 75-83 (1997) (DIV ETHNOPHARMACOL TROP BOTANIC GARDEN RES INST KERALA 695562 INDIA)
L16047	SCREENING OF MEDICINAL PLANTS USED BY THE GARIFUNA OF EASTERN NICARAGUA FOR BIOACTIVE COMPOUNDS. COE,FG: ANDERSON,GJ: J ETHNOPHARMACOL 53 : 29-50 (1996) (DEPT ECOL EVOLUNT BIOL UNIV CONNECTICUT STORRS CT 06269 USA)
M18404	SCREENING FOR CYTOTOXIC ACTIVITY OF PLANTS USED IN TRADITIONAL MEDICINE. CHAPUIS,JC: SORDAT,B: HOSTETTMANN,K: J ETHNOPHARMACOL 23 2/3: 273-284 (1988) (INST PHARM PHYTOCHEM SCH PHARM UNIV LAUSANNE LAUSANNE CH-1005 SWITZERLAND)
M21947	ANTI-INFECTIOUS PHYTOTHERAPY OF THE TREE-SAVANNAH, SENEGAL (WESTERN AFRICA) III: A REVIEW OF THE PHYTOCHEMICAL SUBSTANCES AND ANTI-MICROBIAL ACTIVITY OF 43 SPECIES. LE GRAND,A: J ETHNOPHARMACOL 25 3: 315-338 (1989) (DEPT PHARMACOG GORLEUS LABS STATE UNIV LEIDEN LEIDEN 2300 NETHERLANDS)
M22542	ETHNOMEDICAL NOTES FROM THE TRIBAL INHABITANTS OF THE NORTH GUJARAT(INDIA). SHAH,GL: GOPAL,GV: J ECON TAXON BOTANY 6 1: 193-201 (1985) (DEPT BIOSCIENCES SARDAR PATEL UNIV VALLABH VIDYANAGAR GUJURAT 388 120 INDIA)
M23372	ETHNO-MEDICO-BOTANY OF THE KUMAON HIMALAYA, INDIA. SHAH,NC: JAIN,SK: SOCIAL PHARMACOL 2 4: 359-380 (1988) (NATIONAL BOTANICAL RES INST LUCKNOW UP 226 001 INDIA)

M23617	NEW MACROFILARICIDAL LEADS FROM PLANTS? COMLEY,JCW: TROP MED PARASITOL 41 1: 1-9 (1990) (DEPT MOLE SCI WELLCOME RES LAB BECKENHAM KENT ENGLAND)
M24038	ANTIINFECTIVE PHYTOTHERAPY OF THE SAVANNAH FORESTS OF SENEGAL (EAST AFRICA). I. AN INVENTORY. LE GRAND,A: WONDERGEM,PA: J ETHNOPHARMACOL 21 2: 109-125 (1987) (DEPT PHARMACOG CENT BIO-PHARM SCI UNIV LEYDEN LEYDEN 2300 NETHERLANDS)
M27166	A SURVEY OF PLANT CRUDE DRUGS OF RAYALASEEMA, ANDHRA PRADESH, INDIA. NAGARAJU,N: RAO,KN: J ETHNOPHARMACOL 29 2: 137-158 (1990) (DEPT BOT MED PLANTS RES LAB SRI VENKATESWARA UNIV TIRUPATI AP 517 502 INDIA)
M31296	PLANTS USED IN GUATEMALA FOR THE TREATMENT OF DERMATOMUCOSAL INFECTIONS. 1: SCREENING OF 38 PLANT EXTRACTS FOR ANTICANDIDAL ACTIVITY. CACERES,A: JAUREGUI,E: HERRERA,D: LOGEMANN,H: J ETHNOPHARMACOL 33 3: 277-283 (1991) (FAC CHEM SCI PHARM UNIV SAN CARLOS GUATEMALA CITY GUATEMALA)
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AP1006	DEMONSTRATION OF THE INDUCTION OF APOPTOSIS (PROGRAMMED CELL DEATH) BY TETRANDRINE, A NOVEL ANTI-INFLAMMATORY AGENT. TEH,BS: CHEN,P: LAVIN,MF: SEOW,WK: THONG,YH: INT J IMMUNOPHARMACOL. 13 8: 1117-26 (1991) (DEPT OF CHILD HEALTH, UNIVERSITY OF QUEENSLAND, MATER CHILDREN'S HOSPITAL, SOUTH BRISBANE, AUSTRALIA)

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AP1008	TETRANDRINE, A PLANT ALKALOID, INHIBITS THE PRODUCTION OF TUMOUR NECROSIS FACTOR-ALPHA (CACHECTIN) BY HUMAN MONOCYTES. FERRANTE,A: SEOW,WK: ROWAN-KELLY,B: THONG,YH: CLIN EXP IMMUNOL 80 2: 232-5 (1990) (DEPT OF IMMUNOLOGY, ADELAIDE CHILDREN'S HOSPITAL, AUSTRALIA)
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AP1011	LIPOXYGENASE INHIBITION AND ANTIOXIDANT PROPERTIES OF PROTOBERBERINE AND APORPHINE ALKALOIDS ISOLATED FROM MAHONIA AQUIFOLIUM. MISIK,V: BEZAKOVA,L: MALEKOVA,L: KOSTALOVA,D: PLANTA MED 61 4: 372-3 (1995)
AP1012	SUPPRESSION OF TUMOR CELL GROWTH AND MITOGEN RESPONSE BY APORPHINE ALKALOIDS, DICENTRINE, GLAUCINE, CORYDINE, AND APOMORPHINE. KONDO,Y: IMAI,Y: HOJO,H: ENDO,T: NOZOE,S: J PHARMACOBIO DYN. 13 7: 426-31 (1990) (PHARMACEUTICAL INSTITUTE, TOHOKU UNIVERSITY, SENDAI, JAPAN)
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AP1015	INHIBITION OF PROLIFERATION AND INDUCTION OF APOPTOSIS BY TETRANDRINE IN HEPG2 CELLS. YOO,SM: OH,SH: LEE,SJ: LEE,BW: KO,WG: MOON,CK: LEE,BH: J ETHNOLPHARMACOL 81 2: 225-9 (2002) (COLLEGE OF PHARMACY AND MEDICINAL RESOURCES RESEARCH CENTER, WONKWANG UNIVERSITY, IKSAN, JEONBUK, SOUTH KOREA)
AP1016	THE MULTIDRUG RESISTANCE OF TUMOUR CELLS WAS REVERSED BY TETRANDRINE IN VITRO AND IN XENOGRAPTS DERIVED FROM HUMAN BREAST ADENOCARCINOMA MCF-7/ADR CELLS. FU,LW: ZHANG,YM: LIANG,YJ: YANG,XP: PAN,QC: EUR J CANCER 38 3: 418-26 (2002) (CANCER CENTER, SUN YAT-SEN UNIVERSITY OF MEDICAL SCIENCES, 510060, GUANGZHOU, CHINA)
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