

Uncaryl

Natural activator of the immunological system. Cytoprotector, antioxidant, anti-inflammatory.

UNCARYL is a hydro soluble botanical extract obtained from select stem bark of tropical tree *Uncaria tomentosa* Willd ("Cat's claw") which grows in the Peruvian forest. This plant is a large, woody vine that derives its name from hook-like thorns that grow along the vine that resemble the claws of a cat.

INCI Denomination

Propanediol / Aqua / *Uncaria Tomentosa* Extract

Description



FAMILY: Rubiaceae
GENUS: *Uncaria*
SPECIES: *tomentosa*.
SYNONYMOUS: *N. Tomentosa* Willd. Ex R&S, *nauclea aculeata* HBK

COMMON NAMES: Uña de gato, paraguayo, garabato.

BOTANICAL NAME: *Uncaria tomentosa* (Willd) DC

HABITAT

Highland tropical jungles of Peru. Vine plant native to the borders of High Amazon, on woodlands with high sunlight and between 300 and 800 m high.

DESCRIPTION

Cat's claw is a large, woody vine that derives its name from hook-like thorns that grow along the vine that resemble the claws of a cat. Two closely-related species of *Uncaria* are used almost interchangeably in the rainforests: *Uncaria tomentosa* and *Uncaria guianensis*. Both species can reach over 30 m high into the canopy; however, *Uncaria tomentosa* has small, yellowish-white flowers, while *Uncaria guianensis* has reddish-orange flowers and thorns that are more curved. Cat's claw is indigenous to the Amazon rainforest of Peru, Brazil, Colombia, Ecuador, Guyana, Trinidad, Venezuela, Suriname, and other tropical areas of South and Central America, like Costa Rica, Guatemala, and Panama.

Uncaryl

TRADITIONAL USE

Both South American *Uncaria* species are used by the indigenous peoples of the Amazon rainforest in very similar ways and have long histories of use. Cat's claw (*U. tomentosa*) has been used medicinally by the Aguaruna, Asháninka, Cashibo, Conibo, and Shipibo tribes of Peru for at least 2,000 years.

The Asháninka Indian tribe in central Peru has the longest recorded history of use of the plant. They are also the largest commercial source of cat's claw from Peru today. The Asháninka tribe uses cat's claw to treat asthma and inflammations of the urinary tract; to recover from childbirth; as a kidney cleanser; to cure deep wounds; for arthritis, rheumatism, and bone pain; to control inflammation and gastric ulcers; and for cancer. Indigenous tribes in Piura use cat's claw to treat tumors, inflammations, rheumatism, and gastric ulcers. Indian tribes in Colombia use the vine to treat gonorrhea and dysentery. Other Peruvian indigenous tribes use cat's claw to treat diabetes, urinary tract cancer in women, hemorrhages, menstrual irregularity, cirrhosis, fevers, abscesses, gastritis, rheumatism, inflammations; for internal cleansing and tumors; and to "normalize the body." Reportedly, cat's claw has also been used as a contraceptive by several different tribes of Peru (but only in excessive dosages). Dr. Fernando Cabieses, M.D., a noted authority on Peruvian medicinal plants, explains in his book that the Asháninka boil 5 to 6 kilograms (about 12 pounds!) of the root in water until it is reduced to little more than 1 cup. This decoction is then taken 1 cup daily during the period of menstruation for three consecutive months, which supposedly causes sterility for three to four years.

Uncaria tomentosa is still considered a sacred plant among the Ashaninkas and other indigenous Peruvian Amazonian tribes such as the Campa Indians. Actually, in the Amazon rainforest, there exist two closely-related species of *Uncaria* that are used almost interchangeably. They are *Uncaria tomentosa* and *Uncaria guianensis*, and both are called by the same common name, 'cat's claw' or 'uña de gato'. Sometimes, *Uncaria tomentosa* is called 'uña de gato roja' (red cat's claw), and *Uncaria guianensis*, 'uña de gato blanca' (white cat's claw), in order to differentiate them from each other. According to the Austrian investigator Klaus Keplinger (1999), these herbs serve as a means of "regulating the physical and spiritual worlds" for these tribal groups.

The properties of this plant on human health are so important that in 1994 the WHO organized an International Conference in Switzerland on the subject of *Uncaria tomentosa*. This plant is included at the WHO "Monographs on selected medicinal plants" Volume 3 (pages 349-358)

CAT'S CLAW LEGEND:

The moon, KASHIRI is the highest god for the Ashaninkas. Legend tells that one night that KASHIRI was at the top of the sky, a hunter went to get food for his family. He walked during several hours through a narrow pathway with no results. He was very thirsty and starting to lose his low strengths. Suddenly, he heard a low noise between the trees, and carefully went to see where it came from. He saw a huge Jaguar scratching with its claws the stem of a thick liana.

Uncaryl

Really cautiously he saw the jaguar drinking the liquid coming out from the tree. After, he saw the jaguar, with great agility and fierceness, jumped onto a tapir killing it.

The Ashaninka hunter also drank the powerful liquid from the liana. He felt full of power and strength and decided to take a piece of the liana, noting that it had thorns with the same shape as the Jaguar claws. He started his way back home and suddenly he saw another big tapir which collapsed after a precise arrow from the hunter pierced its heart.

Since then, the Ashaninka tribe valued the use of this plant, which called cat's claw, as magic, curative and revitalizing complement.

SUSTAINABLE DEVELOPMENT – SUPPORT TO LOCAL COMMUNITIES

BioTrade refers to those activities of collection, production, transformation, and commercialization of goods and services derived from native biodiversity under the criteria of environmental, social and economic sustainability.



Cobiosa Bio-Trade: **ethiplayer**

We have the commitment of giving the highest priority to indigenous, botanical ingredients for the purpose of supporting the development of local communities and the principles of fair trade.

ethiplayer is a warranty that the products are cultivated not depreeding the Peruvian natural resources, and with sustainable collection, education and support of local communities:



ETHICAL COSMETIC SUPPLIER

- ✓ Ethical work with people
- ✓ Ethical work with products
- ✓ Ethical work with environment

Effects in Cosmetic Products

Up to 1996, there were already 29 chemical compounds identified at Cat's Claw, based on the data base of photochemistry and etno-botanica of James Duke¹. Today, over 50 components

¹ Beckstrom-Sternberg S, Duke J, Wai K. Chemicals in *Uncaria tomentosa* DC (Pedaliaceae): the ethnobotany database. Fulton (MD): Agricultural Research Service, 1996

Uncaryl

have been identified. Nevertheless, there are 3 main compounds which are responsible for the activity of Uncaryl:

- Alkaloids of oxindolic group (mitraphylline, rhynchophylline, isorhynchophylline, pteropodine)
- Glycosides of Quinovic Acid
- Polyhydroxylates Triterpenes²
-

There are other components that can have an important role at the cosmetic activity of this plant, like proanthocyanidins, poly-oxygenated triterpenes, catequines, tannins, and sterols like β -sitosterol³. There is a synergistic action of all these components for a better final effect.

Some of the cosmetic actions of Uncaryl are such as: Antioxidant, acting against free-radicals, which will accelerate skin aging process, nutritive, regenerative, and it helps reducing acne problems.

INMUNNO-MODULATING – ANTI-INFLAMMATORY ACTION

The plant “Uña de gato” has been traditionally used because its anti-inflammatory activity. Due to this, there are many *in vitro* studies made to probe this action, focused mainly in trying to discover its mechanism of action.

The anti-inflammatory effect of the water extract of *Uncaria tomentosa* can be understood by means of some plant sterols (beta-sitosterol, stigmasterol, and campesterol) with well-known anti-inflammatory properties found in this extract. Additionally, in 1991 a group of novel phytochemicals found in the bark and roots of this plant (called quinovic acid glycosides) had been documented with anti-inflammatory properties. Even more, these new phytochemicals have been reported with the most potent anti-inflammatory effect among all the constituents known in the plant. Some antioxidant chemicals (catechins and procyanidins) found in the extract also contributes to the anti-inflammatory properties.

These studies suggest that, one of the bio-chemical routes for the anti-inflammatory effect could be the suppression of the activation of the transcription agent NF- κ B⁴. This agent is an important regulator of the transcription of several inflammatory mediators, including cytokines like TNF α . This effect is obtained thanks to the presence of the Oxindole alkaloids, like Uncarine F, Isomitrafiline and Pteropodine, Mitafiline.

Another study has determined that the glycoside of the quinovic acid, has an important effect against inflammation, reducing it up to 33%⁵.

² Montoro P, Carbone V, Quiroz J de D, et al. Identification and quantification of components in extracts of *Uncaria tomentosa* by HPLC-ES/MS. *Phytochem Anal* 2004; 15: 55-64

³ Senatore A, Cataldo A, Laccarino FP, et al. Ricerche fitochimiche e biologiche sull *Uncaria tomentosa*. *Boll Soc Ital Biol Sper* 1989; 656: 517-20

⁴ Aguilar J, Rojas P, Marcelo A, et al. Anti-inflammatory activity of two different extracts of *Uncaria tomentosa* (Rubiaceae). *J Ethnopharmacol* 2002; 81:271-6

⁵ Aquino, R., de feo, V., De Simona, F., et al.. Plant Metabolites: new compounds and anti-inflammatory activity of *Uncaria tomentosa*. *J. Nat prod* 1991; 54: 433 - 59

Uncaryl

The immune-stimulating activity has been suggested after an investigation where it was confirmed that, the extracts found at “Uña de gato”, promote the phagocytosis of the granulocytes at cellular tissues⁶.

ANTI-OXIDANT ACTION

Free radicals are chemical agents with a powerful oxidation capacity. They can be produced in our body by hexogen factors (contamination, sun irradiation, smoking, etc) or by endogen factors (stress, lack of sleep, excess of work...)

In normal conditions, the skin has the mechanism to keep a balance between the free-radicals and the anti free-radical systems of defense. With age and premature aging, this balance is broken allowing the free-radicals to attack the cell membranes, destroy its nucleus and cause and accelerated aging process.

The phenolic compounds, like flavonoids, phenolic acid, diterpenes and tannins, are the main responsible for the high antioxidant activity of Uncaryl.

A comparison of the total content of phenolic compounds at Uncaryl, with the total content founded at other plants, cereals and medicinal plants⁷, shows that the rates of Phenolic compound at Uncaryl are much higher, than at the others⁵:

| | Uncaryl | Cereals | Broccoli | Blackberry | Horsetail | Echinacea |
|---|----------|---------------------|-----------|------------|-----------|-----------|
| Total Content of Phenolic Compounds (TPC) | 292 mg/g | 0.481 to 0.896 mg/g | 11.7 mg/g | 23.1 mg/g | 216 mg/g | 62 mg/g |

The high concentration in Tanins and Phenolic Compounds at Uncaryl are very important at the anti free-radical activity of this active ingredient, but also there are other substances, like proantocyanidins⁸ with important effects at this activity. Their chemical structure includes aromatic rings linked to a hydroxyl radical. This hydroxyl can be donated to catch the oxygen singlet, making the form stable. It has also been demonstrated the antioxidant capacity of other components of this plant, like triterpenes in the form of ursolic acid and oleanoic acid, which are effective against lipidic peroxidation⁹

⁶ Wagner, H., Kreutzkamp, B., Juristic K. Die Alkaloide von *Uncaria tomentosa* und ihre Phaozytose-steigernde Wirkung. *Planta med* 1985; 5: 419 -23

⁷ Radoslaw, P, Henryk, Z, D. Ciesiolka, Gulewicz K. Antioxidant activity of ethanolic and aqueous extracts of *Uncaria tomentosa* (Willd.) DC. *J. Ethnopharmacol.* 2005; Sep 29

⁸ Gonçalves, C., Dinis, T., batista, M.T. 2005. Antioxidant properties of proanthocyanidins of *Uncaria tomentosa* bark decoction: a mechanism for anti-inflammatory activity

⁹ Falkiewicz, B., Łukasiak, J. 2001. Vilcacora [*Uncaria tomentosa* (Willd.) DC. and *Uncaria guianensis* (Aublet) Gmell.] – a review of Publisher scientific literatura. *Case report and Clinical Practice Review* 2(4), 305 – 316

¹⁰ Sandoval, M., charbonnet, R.M., Okuhama, N.N., et al. 2000. cat's clan inhibits TNF α production and scavenges free radicals: role in cytoprotection. *Free Radical Biology and medicine* 29(1), 71 - 78

Uncaryl

Using the DPPH (1,1-Diphenyl-2-picrylhydrazyl) method it has been demonstrated the protective action of *Uncaria tomentosa* against the cytotoxicity caused by UV radiation¹⁰

Uncaryl is a good option to improve the natural defenses of the body, and especially on the skin, to fight against the damaging action of the free-radicals.

OTHER ACTIONS

Some tests performed suggest the capacity of *Uncaria Tomentosa* of inhibit the lipase lipoprotein (LPL). On adipocyte cultures, it was demonstrated that this enzyme that breaks down large molecules of fat to facilitate their storage in cells. Uncaryl could then be an effective active at **anti-cellulite treatments**

Uncaria tomentosa also helps to minimize the **toxic effects of tobacco smoking**. Effectively, this plant significantly reduces the mutagenicity of substances present in the urine of tobacco smokers.

Dosage – Solubility – Processing

A- DOSAGE:

Recommended dosage is from 3 to 5%.

B- SOLUBILITY:

Hydro-soluble.

C- PROCESSING:

UNCARYL is compatible with most of the raw materials normally used in cosmetics, with a pH range of 5 to 8. Avoid heating over 60°C. Nevertheless, it is the duty of the formulator to make sure of the stability of the formulae with the necessary tests.

It would be preferably incorporated into cosmetic preparations during the finishing process, at the cooling phase at around 30 °C. Maintain agitation until its complete solution.

Other Data

PRESERVATIVES: None

MICROBIOLOGY: Maximum 50 CFU (not pathogenic)

TOLERANCE: Excellent.

STORAGE: Store at room temperature, dry and away from light.

If original container is opened, to avoid secondary microbiological contamination handle with special care and keep refrigerated.