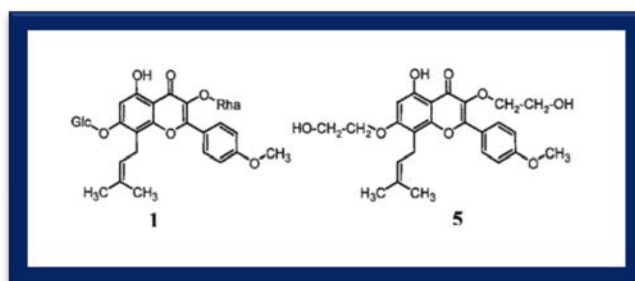


RESEARCH REPORT

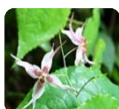
PATENTED SEXUAL FORMULATION INGREDIENTS & BENEFITS



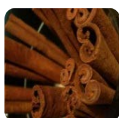
U.S. Patent No. 7,438,934



Tribulus terrestris



Epimedium koreanum



Cinnamomum cassia

NUTRICELLULA
HEALTH NUTRITION

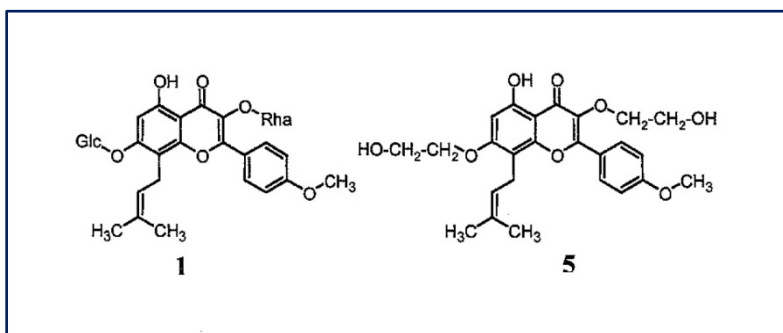
BOTANICAL SCIENCE FOR HEALTHY LIVING

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According to the *Journal of Natural Products* the inability to achieve or maintain an erection for satisfactory sexual function is an increasing problem with a considerable impact on interpersonal relationships and quality of life for most men. During an erection, nitric oxide (NO) is released from the parasympathetic nerves and diffuses into the smooth muscle cells of the arterial walls of the penis. Select inhibitors, such as sildenafil (Viagra), tadalafil (Cialis) and vardenafil (Levitra) are used to treat erectile dysfunction but with severe side effects such as visual disturbances and priapism.

A variety of natural plant types have been effective in treating sexual functioning issues. Scientists at the Department of Pharmacology at The University of Milan conducted research blending *Tribulus terrestris*, *Epimedium*, and *Cinnamomum cassia*, which are extracts used in traditional Chinese and Ayurvedic medicine to improve sexual performance.

Figure 1.1 Chemical Component Breakdown of the Proprietary Blend of *Tribulus terrestris*, *Epimedium*, and *Cinnamomum cassia*



What is *Tribulus terrestris*?



Tribulus terrestris is a flowering plant native to temperate climates in southern Europe and Asia, throughout Africa, and Australia. The plant has many common names, such as bindii, bullhead, burragokharu, caltrop, cat's head, devil's eyelashes, devil's thorn, devil's weed, goathead, puncturevine, and tackweed. It's a tap-rooted, herbaceous perennial plant. A week after the plant's flowers bloom it bears a fruit that easily falls apart into four or five single-seeded nutlets. The nutlets are hard with sharp spines. The nutlets strikingly resemble goats' or bulls' heads and horns.

Tribulus terrestris has been used for centuries in traditional Chinese and Ayurvedic medicinal practices. The active ingredients are extracted from the fruits, which contain alkaloids, resins, tannins, saponins, sugars, sterols, essential oil, peroxidase, diastase, and glucoside.

Benefits of *Tribulus terrestris*

A few of the benefits of *Tribulus terrestris* include:

- Improved athletic performance
- Increased energy
- Healthier sex drive
- Improving male & female fertility
- Better appetite
- Lower body fat levels

For Athletic Performance

For athletes *Tribulus terrestris* helps to increase strength and lean muscle mass. It also normalizes and promotes healthy nitrogen balance and increases the natural level of testosterone. Photochemical found in *Tribulus terrestris* stimulate the production of the

hormone testosterone. This hormone plays an important role in building muscles, and stimulates cells to absorb more protein from food. It also has a positive effect on strength and stamina, which are both crucial for training elite athletes and body builders. Bodybuilding requires extreme endurance and energy, and uses up the natural testosterone levels found in the body. For this reason, using natural herbs to build testosterone back up is essential for the best athletic performance.

For Sexual Health & Fertility

Male Sexual Health

Tribulus terrestris has been shown effective for enhancing luteinizing hormone production, which raises the natural level of testosterone. The extract can produce statistically significant increases in levels of testosterone, dihydrotestosterone and dehydroepiandrosterone, and produces effects suggestive of aphrodisiac activity. The pro-erectile aphrodisiac properties were concluded to likely be due to the release of nitric oxide from the nerve endings innervating the corpus cavernosum penis. It was also shown to have strong inhibitory activity COX-2.

The main part of Tribulus terrestris that aids in fertility for men is a constituent called protodioscin. This constituent improves DHEA levels in the male body. Men with erectile dysfunction have low levels of DHEA. Some studies have shown that protodioscin, extracted from Tribulus terrestris, increases natural DHEA levels needed for proper erection. Protodioscin is also the main constituent that is responsible for Tribulus' aphrodisiac qualities.

Male Fertility

Studies show the following male fertility benefits:

- Increase in sex hormone production
- Increase in luteinizing hormone and testosterone
- Improvement in libido and overall sexual function
- Increase in sperm count, motility, and health
- Decrease in the effects of anti-sperm antibodies
- Enables the male body to produce DHEA to treat erectile dysfunction

A Bulgarian research study in 1998 used Tribulus terrestris couples who were having difficulties in conceiving due to anti-sperm antibodies. Anti-sperm antibodies trigger an immune response to semen. Triggered antibodies work to kill off the sperm. High numbers of sperm antibodies can make it difficult for the sperm to reach the egg, and/or fertilize the egg. Anti-sperm antibodies also may damage sperm that survive, which increases chance of miscarriage. During the study a tablet of Tribulus terrestris was given orally to couples with anti-sperm antibodies. Both the man and woman were treated. Men received 1 dose, 3 times a day for 60 days. Women received 1 dose, 3 times a day for 7 days, in the beginning of their cycle, for 6 months. The researchers found a 61% increase in conception. The average time it took for couples to conceive was 5.2 months

In addition, Chinese and Ayurvedic medical practitioners have found Tribulus terrestris to be very effective in improving sperm count, motility, and morphology when combined with dietary and exercise changes.

Female Fertility

Studies show the following female fertility benefits:

- Increase in sex hormone production
- Increase in follicle stimulating hormone and estradiol
- Improvement in sexual desire
- Normalizes ovulation in infertile women when used prior to ovulation

A study performed on 36 women who were not ovulating showed 67% realized normal ovulation after only 2-3 months of consistent use. The women were given 300-400mg a day, from day 5-14 of their menstrual cycle. 6% of study participants became pregnant right away.

A study published in August, 2011 showed that Tribulus terrestris reduced the number of cysts in the ovaries, in female rats with Poly Cystic Ovarian Syndrome. High doses of the extract were administered orally. The treatment showed the ovarian cysts to have significantly decreased, and normal ovarian function restored. While this was not a human study, it gives scientists more research to use when considering this herb for treatment of Poly Cystic Ovarian Syndrome in humans. Many herbalists and naturopathic doctors find Tribulus terrestris is an effective female fertility tonic and ovarian stimulant making it an excellent choice for women with PCOS. This is especially true for women who are not ovulating due to Poly Cystic Ovarian Syndrome. The herb has been found to be wonderful in aiding women with menstrual irregularities by improving timing of the entire menstrual cycle.

Pregnancy & Tribulus terrestris

Tribulus terrestris **is not recommended** for use during pregnancy. Women trying to conceive should only use this herb prior to ovulation. Tribulus terrestris has been shown to cause cholestasis when used during pregnancy. Cholestasis is a liver disease that only happens during pregnancy. In women who develop cholestasis, the normal flow of bile from the gallbladder is affected by very high levels of pregnancy hormones. The gallbladder holds bile from the liver, aiding in the breakdown of fats for digestion. Cholestasis slows this function down, which may cause bile acids to spill into the blood stream.

Additionally, animal based studies have shown to cause locomotor disorders that impact the central nervous system. Other studies found a decreased survival rate of offspring when Tribulus terrestris is taken during pregnancy. This is why Tribulus should not be used in pregnancy. Discontinue use of Tribulus once you find out you are pregnant or if you think you may be pregnant.

What is Epimedium?



Epimedium is a pungent herb found in Asia and the Mediterranean. The Chinese name for it is Yin Yang Huo, which loosely means "*licentious goat plant*." Legend has it that the name horny goat weed came from a herder who noticed his goats becoming more sexually active after eating the plant. Horny goat weed was named epimedium because it is similar to a plant found in the ancient Asian kingdom of Media, now a part of Iran.

Although epimedium has a history of traditional use for disorders of the kidneys, joints, and liver, its principle use in the United States is as an aphrodisiac and to combat fatigue.

A few of the benefits of Epimedium include:

- Fighting impotence & infertility
- Increasing blood circulation
- Promotes sex hormone production
- Provides relief for the symptoms associated with menopause
- Eases liver, back and joint related problems
- Aids in fighting osteoporosis

Sexual Health

Epimedium is an exceptional herb which has effects similar to testosterone. The herb increases sexual craving and encourages sexual activity in men as well as in women, invigorates the sensory nerves, augments production of sperm and enhances desire for sexual activity. Epimedium helps to augment the flow of blood to the penis while simultaneously thwarting the deposition of a protein known as fibrin on the walls of capillaries. It helps in checking the loss of sexual functioning in men with atherosclerosis. It has the ability to bring down high blood pressure by means of dilating or widening the blood vessels. At the same time, this herb inhibits the production of hormones by the adrenal glands, which may obstruct the flow of blood to the sex organs. Men have enhanced penile erection. Women find benefit from the augmented flow of blood and possibly also from other alkaloids and sterols that have actions like testosterone in the plants.

An active ingredient in Epimedium is icariin. Icariin works by increasing levels of nitric oxide, which relax smooth muscle. The Italian scientists found in their studies it relaxed rabbit penile tissue by nitric oxide and PDE-5 activity. Additional studies conducted by the University of Milan have demonstrated that injections of Epimedium extract directly into the penis of the rat results in an increase in penile blood pressure, which directly resulted in a stronger erection and better sexual performance. Like Viagra, Cialis and Levitra,

the Icariin in Epimedium inhibits PDE-5. Epimedium has been shown to up-regulate genes associated with nitric oxide production and changes in adenosine/guanine monophosphate balance in ways that other PDE5 inhibitors do not.

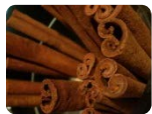
Immune System & Kidney Health

Extracts obtained from epimedium which contain polysaccharides and glycosides help in super charging the immune system. Extracts of epimedium have demonstrated the aptitude to annul suppressed immunity in animal studies as well as clinical experiments undertaken on humans. Glycosides enclosed by the herb enhance coronary flow, lower the blood pressure to some extent and also show effects that help to protect the liver. Studies undertaken with epimedium on rats enduring kidney ailments have shown that the herb lowered the intensity of blood urea nitrogen (BUN) as well as serum creatinine. In a controlled trial, a decoction prepared using epimedium has proved to be extremely useful for treating patients enduring chronic kidney failure and requiring dialysis of blood, particularly using an artificial kidney.

Osteoporosis

Epimedium also helps in the treatment of osteoporosis since research studies indicate Icariin also stimulates osteoblast activity in bone tissue. When tested in a test tube, this herb has shown to augment bone re-absorption by means of osteoclasts, a large multinucleate cell directly linked to the areas of bone re-absorption. It is where fracture is healing. When performing clinical trials on rats, epimedium has been found to enhance the mineral content in their body as well as encourage formation of bones.

What is Cinnamomum cassia?



Cinnamomum cassia originated from tropical Asia, especially Sri Lanka, India, China and Burma. Due to its vast medicinal uses, it has found a prominent position in traditional medicines as well as Ayurveda and Chinese medicinal systems. Cinnamomum cassia is obtained from the bark and leaves of cinnamon tree.

A few of the benefits of Cinnamomum cassia include:

- Antibacterial and antifungal agent effective in treating infections
- Helps in blood circulation
- Acts as a sexual stimulant
- Used to combat diarrhea
- Aids in fighting depression
- Used to treat nausea
- Provides relief to arthritis patients
- Improves circulation
- Aids in digestion and reduces gas
- Reduces menstrual cramps

Treating Infections

Cinnamomum cassia is in countering viral infections and providing protection from cold, influenza and other virally spread diseases. It inhibits microbial growth and protects from microbial infections especially in urethra, colon, kidneys, and urinary tracts. Being an anti microbial and anti viral agent, it fights the infections causing fever and thus helps lower body temperature. The circulatory property of this oil also helps boost the immune system of the body.

Digestive Aid

Cinnamomum Cassia has varied benefits on the digestive system. As an anti diarrhea agent, it can be used to bind bowels and stop diarrhea. Being an anti microbial agent, it also cures diarrhea caused due to microbial action by inhibiting its growth. It is also used to treat nausea and to stop vomiting. Since Cinnamomum Cassia has carminative properties, it prevents gases forming in the intestines.

Anti-Depressant

Cinnamomum Cassia fights depression due to its stimulant properties and how the stimulant positively impacts the brain.

Circulation & Arthritis

Cinnamomum Cassia improves circulation of blood and thereby facilitates distribution of nutrients and oxygen to all the body parts. This property is also beneficial in fighting rheumatism and arthritis. Acting as a stimulant, it improves circulation of blood and brings warmth to the joints affected by the diseases.

Menstruation Related Issues & Sexual Health

Cinnamomum Cassia relaxes menstrual cramps and releases blocked menstruations. It also provides relief from symptoms such as headaches, nausea, drowsiness associated with menses. It can be used to treat uterine hemorrhage due to its astringent properties. Due to its stimulant properties it is used to treat loss of sexual desires and other sexual disorders such as frigidity and impotency.

Research Resources

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