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Feverfew
 Tanacetum parthenium



FEVERFEW

Common name: feverfew, bachelor's
 button, feather few, wild camomile

Latin Name: *Tanacetum parthenium* *Chrysanthemum*
parthenium, *Matricaria parthenium*

Feverfew, as it is most commonly known, is a plant that is native to the Balkan Peninsula; Eastern European countries such as Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo, Montenegro, Romania, Serbia, and Slovenia. However Feverfew is now found worldwide in the regions of Australia, Europe, China, Japan, and North Africa. In the mid-19th century, feverfew was introduced in the United States. The plant grows wild along roadsides, fields, waste areas, and along the borders of woodlands of Canada to Maryland and westward to Missouri. It is also found in South America.

The plant is considered to be of the aster [daisies] family; a name which originates from Ancient Greek, which means 'star' referring to the shape of the flower head. It would seem that it was the Greeks who were the first to identify the plant's medicinal properties. They were the ones who called the herb 'Parthenium' because it was thought to have saved the life of someone who had fallen from a Parthenon, [a temple built to Athen's patron goddess] during its construction in the 5th century BCE. They have used it for psoriasis, allergies, asthmas, tetanus, dizziness, nausea and vomiting. Also it was Greek physician that used it as an antipyretic, thus the name '*feverfew*' .





Feverfew was known as “medieval aspirin” or the “aspirin” of the 18th century. It became a medicinal plant that has been used throughout the centuries for treatment various elements ranging from fevers, migraine headaches, rheumatoid arthritis, stomach aches, toothaches, insect bites, infertility, menstruation and issues involving labor during childbirth. Feverfew also has been used to induce abortions, as an insecticide, and for treating the common coughs and colds.

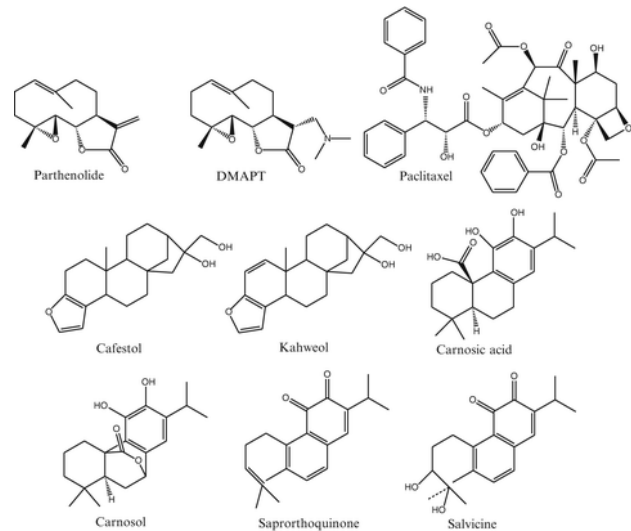
In Central and South America, the plant has been used to treat a variety of disorders such as treating colic, kidney pain, morning sickness, and stomach ache. decoction [extraction of the essences by boiling /heating]of the herb to aid digestion, as a cardiogenic, an emmenagogue tonic[to increase/regulate mensural flow], and as an enema for worms and as an antispasmodic. In Venezuela, it is used for treating earaches.

The leaves were ingested either fresh or dried, with a typical daily dosage of 2–3 fresh leaves. The bitterness was offset by sweeteners before ingestion. The dosage to treat migraine headaches a daily dosage [adult] of 50-150of dry leaves, with or after food; or 5-20 drops
Feverfew also has been planted around houses to purify the air because of its strong, lasting odor, and a tincture of its blossoms is used as an insect repellent and balm for bites. It has been used as an antidote to counteract the effects of opium.

The allure of this plant is derived from its chemical properties. The plant contains a large number of important biological products that has many pharmacologic properties such as the active principles of 30 sesquiterpene lactones known to be present, including the principle one parthenolide. Parthenolide is found in the superficial leaf glands[0.2%-0.5%], but not in the stems. It makes up 85%of the total sesquiterpene component. Sesquiterpene are molecules that deliver oxygen to cells much like the way that hemoglobin does in the blood. It also has the function of erasing or deprogramming in miss-written codes in the DNA. There's also the possibility as evidence has shown that the lactones would be beneficial in the treatment of cardiovascular disease and as antimalarials and for the prevention of neuro-degeneration, anti-migraine activity.

Another potentially active constituents include flavonoid glycosides [a plant metabolites thought to provide health benefits] pinenes. It has multiple pharmacologic properties, such as cell signalling pathways and antioxidant effects, anticancer, anti-inflammatory, cardiogenic, antispasmodic, an emmenagogue, and as an enema for worms.

Twenty-three compounds, representing 90.1% or more of the volatile oils, have been identified from feverfew, including *eugenol*. Coumarin [vanilla scented compound] have also been isolated from the roots of the plant.



Anti-inflammatory activity. of feverfew involves a proposed mechanism of action that involves parthenolide specifically binding to and inhibiting I κ B kinase complex (IKK) β . [IKK β plays an important role in pro-inflammatory cytokine-mediated signaling]. Feverfew appears to be an inhibitor of prostaglandin synthesis. Extracts of the portions of the plant above ground [except the roots] suppresses prostaglandin production; leaf extracts inhibit prostaglandin production to a lesser extent. Neither the whole plant nor leaf extracts inhibit cyclooxygenation of arachidonic acid, which is the first step in prostaglandin synthesis. But rather it is the chloroform found in leaf extracts, rich in sesquiterpene lactones, that inhibit production of inflammatory prostaglandins human WBC. Inhibition was irreversible and the effect was not caused by cytotoxicity. Studies have shown that the lipophilic compounds, other than

parthenolide may be associated with anti-inflammatory activity, particularly with reducing human neutrophil activity.

Tanetin, a lipophilic flavonoid found in the leaf, flower, and seed of feverfew, blocks prostaglandin synthesis. Aqueous extracts do not contribute to feverfew's anti-inflammatory activity, but do prevent the release of arachidonic acid and inhibit in vitro aggregation of platelets stimulated by



adenosine 5"-diphosphate (ADP) or thrombin. Research suggest that feverfew's inhibition of prostaglandin synthesis differs in mechanism from that of the salicylates

Phospholipase inhibition in platelets has been documented [not recommended for patients undergoing surgery]. Extracts of feverfew inhibit platelet 5-HT secretion via neutralization of sulfhydryl groups inside or outside the cell. The sesquiterpenes in feverfew contain the alpha-methylenebutyrolactone unit that reacts with sulfhydryl groups. Feverfew extracts are not only potent inhibitors of serotonin release from platelets but also of polymorphonuclear leukocyte granules, providing a possible connection between the claimed benefit of feverfew in migraines and arthritis.

Chemotherapeutic activity of Parthenolide inhibits the growth of gram-positive bacteria, yeast, and filamentous fungi. A alcoholic extract of feverfew inhibited the growth of *Leishmania amazonensis* [protozoan parasite]. Parthenolide can also inhibited *Mycobacterium tuberculosis*.

Feverfew anticancer activity mechanisms of action may include cytotoxic [toxic to living cells] action associated with disruption of DNA replication by the highly reactive lactone ring, epoxide, and methylene groups of parthenolide through inhibition of thymidine into DNA

Parthenolide and similar lactones displayed anticancer activity against several human cancer cell lines, including human fibroblasts, human laryngeal carcinoma, human cells transformed with simian virus, human epidermoid cancer of the nasopharynx, and anti-Epstein-Barr early antigen activity. Migraine headache, prophylactic treatment

Feverfew action does not appear to be limited to a single mechanism. The plant's extracts affect a wide variety of physiologic pathways. Some of these mechanisms have been discussed previously, including inhibition of prostaglandin synthesis, decrease of vascular smooth muscle spasm, and blockage of platelet granule secretion.

Sedative and mild tranquilizing effects from the plant's extract also inhibit the release of enzymes from white cells found in inflamed joints, and a similar anti-inflammatory effect may occur in the skin [use of feverfew in psoriasis].





As a product feverfew is available in various forms [tea, powder, tablet, tincture essence], suspension, extract) One could possibly call this plant a 'wonder drug' because its list of healing and medicinal properties seems to be endless.



References:

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