Herbs for the treatment of inflammatory (autoimmune) connective tissue disease

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Cinchona calisaya / Quinine

Quinine was first recognized as a potent antimalarial agent hundreds of years ago. Since then, the beneficial effects of quinine and its more advanced synthetic forms, chloroquine and hydroxychloroquine, have been increasingly recognized in a many of other diseases in addition to malaria.
The active agents, **quinine and cinchonine were isolated and used as early as 1894 to treat lupus**.
In recent years, antimalarials were shown to have various immunomodulatory effects, and currently have an established role in the management of rheumatic diseases, such as systemic lupus erythematosus and rheumatoid arthritis, skin diseases, and in the treatment of chronic Q fever.
Lately, additional metabolic, cardiovascular, antithrombotic, and antineoplastic effects
Several papers review various immunomodulatory mechanisms of antimalarials and the current evidence for their beneficial effects in various diseases and in potential novel applications.

Infusions of the bark of the Peruvian cinchona tree have been used for centuries for medicinal purposes and were observed to have both antimalarial and anti-inflammatory properties. The active agents, **quinine and cinchonine were isolated and used as early as 1894 to treat lupus**.
As slow acting, low toxicity drugs they are useful in combination therapy, especially for SLE, since their mode of action is quite different to other anti-inflammatory drugs.
They act by inhibiting lysosomal and endosomal function, thus limiting the release of secreted proteins, including cytokines. Antigen processing and presentation, and thus T cell activation are also inhibited

Quinidine a stereoisomer of quinine is used as a **class I antiarrhythmic agent, that is, to prevent ventricular arrhythmias.** quinidine has been shown to alleviate symptoms in patients with **amyotrophic lateral sclerosis and multiple sclerosis.**

Clearance:
Quinine is eliminated primarily via hepatic biotransformation. Approximately 20% of quinine is excreted unchanged in urine.

Quinidine is also an inhibitor of the cytochrome P450 enzyme 2D6, and can lead to increased blood levels of lidocaine, beta blockers, opioids, and some antidepressants

Common side effects (these are dose-dependent and period of prescribing)
Thrombocytopenia
Headache
Tinnitus
Visual disturbances
Sweating
Arrhythmia
Photosensitivity
Apparently its use to treat malaria during pregnancy is still recommended.
Contra-indications
The metabolism of Quinine can be decreased when combined with Cyclosporine.
Anticoagulants
Antivirals
Antiarrhythmics

Uncaria tomentosa / cat's claw

Uncaria tomentosa and Uncaria guianensis are Peruvian herbs derived from woody vines with small claw-like thorns (hence the vernacular name, cat's claw) at the base of the leaf, which allow the plant to climb to heights of up to 100 ft. Traditionally, the bark of cat's claw is used to treat arthritis, bursitis, and intestinal disorders. The active ingredients appear to be polyphenols (flavonoids, proanthocyanidins, and tannins), alkaloids, and sterols. Various studies indicate that this Peruvian herb induces a generalized reduction in proinflammatory mediators.

This herb has been shown to prevent the activation of the transcriptional factor NF-kB and it directly inhibits TNF-α production by up to 65-85%. It inhibits the expression of inducible genes associated with inflammation, specifically negating the expression of inducible nitric oxide synthase, and hence attenuates nitrous oxide production. Side effects may include nausea, although it has shown an impressive protective effect on indomethacin-induced enteritis in laboratory studies.

Boswellia serrata resin / Frankincense

Also called Indian frankincense or Salai, boswellia is traditionally used to treat arthritis, respiratory problems and digestive symptoms. Modern studies have now supported these uses with the identification of active anti-inflammatory compounds in boswellia called boswellic acids. These acids were found to deter the formation of enzymes that can lead to inflammatory disorders such as bronchial asthma, rheumatoid arthritis, Crohn's disease and ulcerative colitis.
Boswellia is commonly available in tablets and capsules. Though toxicity associated with this anti-inflammatory herb is rare, follow the dosage recommendation on the bottle to ensure safety.

Cimicifuga racemosa / Black cohosh

1) as a selective estrogen receptor modulator,
2) through serotonergic pathways,
3) as an antioxidant, or
4) on inflammatory pathways.
While the most prominent triterpene in BCE, 23-epi-26-deoxyactein, suppresses cytokine-induced nitric oxide production in brain microglial cells, the whole BCE extract actually enhanced this pathway.

Inhibits mRNA of cytokines (IL-4, IL-5 and TNF-alpha) induced by the inflammatory agents human mast cells

Curcuma longa / domestica / Turmeric

Curcumin The laboratory studies have identified a number of different molecules involved in inflammation that are inhibited by curcumin including phospholipase, lipooxygenase, cyclooxygenase 2, leukotrienes, thromboxane, prostaglandins, nitric oxide, collagenase, elastase, hyaluronidase, monocyte chemoattractant protein-1 (MCP-1), interferon-inducible protein, tumor necrosis factor (TNF), and interleukin-12 (IL-12).

Curcumin has been demonstrated to be safe in six human trials and has demonstrated anti-inflammatory activity. It may exert its anti-inflammatory activity by inhibition of a number of different molecules that play a role in inflammation.
Omega-3 EFAs (fish oil)

Poor bioavailability due to its rapid metabolism in the liver and intestinal wall. In this study, the effect of combining piperine, a known inhibitor of hepatic and intestinal glucuronidation, was evaluated on the bioavailability of curcumin in rats and healthy human volunteers.
e most out of its boosted benefits.

1 Black pepper
Freshly ground black pepper will increase the bioavailability of curcumin, which basically means it makes it possible for the body to absorb the curcumin. Piperine is the key active ingredient in black pepper, and according to various studies, it's said to help make curcumin more bioavailable. The studies, for example this one, have been conducted on both humans and rats.

2 Fat
This theory is not as well-founded as the one about black pepper, but some studies suggest that curcumin in turmeric is more easily absorbed when taken with fat. Turmeric is fat-soluble, which means it dissolves in fat, and in order for the body to be able to absorb it, you have to add some fat.

3 Heat
According to an American study, boiling turmeric for up to 10 minutes will increase its solubility, and may enhance absorption. Add turmeric to a cup of tea or some hot water. It's also super easy and a great idea to add turmeric to all kinds of hot food. We usually add a few teaspoons to the water, while preparing quinoa or durra (sorghum bicolor).

Salix alba / White Willow Bark

White willow bark is the bark of the white willow tree, obviously! Please ensure are very familiar with identifying the tree before you start peeling the bark and brewing a tea!

White willow bark has been used for thousands of years to reduce fever and inflammation. It contains salicin, a compound very similar to aspirin. Studies have shown that willow bark is effective for reducing lower back pain. I like to keep a bottle of this on hand when traveling, as the pressure in airplanes tends to help with my headaches.

White willow is available dried as a tea, powdered in capsules or as a tincture. It's also often used as an ingredient in combination pain-relief supplements.

Contains Phenolic Glycosides Salicin and arbutin, upon oral administration, is metabolized (which involves glycon hydrolysis and oxidation of benzyl carbon) in the gastrointestinal tract and bloodstream into the pharmacological active form, salicylic acid.
These compounds have been identified to exert a modulating role in inflammatory processes (inhibition of the activation of NF-κB and downregulating COX-2 expression

Andrographis paniculata / King of the bitters

NF-kB = (**nuclear factor kappa-light-chain-enhancer of activated B cells**)

Andrographis paniculata, literally 'king of bitters' is used in traditional Siddha and Ayurvedic systems of medicine as well as in tribal medicine in India and some other countries for multiple clinical applications, such as rheumatoid arthritis and inflammatory symptoms of sinusitis.
Andrographolide, a diterpenoid lactone, and the major active principle isolated from the plant A. paniculata, has been shown to possess a strong anti-inflammatory activity through suppression of inflammatory mediators such as NF-κB, TNF-α, IL-6, MIP-2, iNOS and COX-2. The anti-diabetic potential of the plant extract was shown by evoked insulin secretion.

Myrica cerifera
Southern bayberry, southern wax myrtle, candleberry, bayberry tree

Bayberry root bark has a history of use in herbalism. The plant contains several organic compounds, including: triterpenes such as myricadiol, taraxerol, and taraxerone, as well as chemicals such as different flavonoids, tannins, resins, gums, and phenols. Myricadiol has a slight impact on levels of potassium and sodium, while a substance called myricitrin has antibiotic properties

Used on the theory of gut dysfunction and effects on immunity

An very powerful antiseptic esp used in mouthwash, dilute tr 1:10

Filipendula ulmaria / Meadowsweet

Constituents: Volatile oil: polyphenol components (**salicylates – salicin, salicylic acid**), flavonoids, tannins, coumarins, mucilage, CHO, ascorbic acid
Medicinal actions: Antiseptic, analgesic, **anti-inflammatory, astringent**, diaphoretic, anti-coagulant, **antacid**, carminative, anti-emetic, digestive, hepatic, **diuretic, anti-rheumatic**

High tolerance. Good safety record, can be taken in larger quantities. Seek good quality fresh tincture, more of the flowering top and less of the woody parts!

Inhibit COX-1 and -2 enzyme activities, whereby FUA extract (62.84% and 46.43% inhibition, respectively) was double as effective as the root extract (32.11% and 20.20%, respectively)
Filipendula effects on systemic inflammation and joint function. Reduces circulating cytokines and improved mechanical joint flexibility. Blood serum was analyzed for cytokines IL-1β, IL-6, and TNFα. There was an average decrease of 21.7% IL-1β in the treatment group, whereas the decrease seen in the placebo

Zanthoxylum americanum / Prickly Ash

Part used: The bark & berries
Constituents: Isoquinoline alkaloids (chelerythrine, nitidine), volatile oil in the berries, amines, lignans, resins, tannin
Actions: Circulatory stimulant, alterative, carminative, diaphoretic, analgesic, anti-microbial, lymphatic stimulant, rubefacient, bitter digestive, hepatic, **anti-rheumatic**, antispasmodic

Medical uses:
May be used in a similar way to cayenne although slower in its action. Can be used in many chronic conditions such as rheumatism and skin diseases. Will promote blood flow to the periphery and joints and is specific for peripheral circulatory insufficiency associated with rheumatic symptoms. Any sign of poor circulation can benefits from its use. Externally it can be used as stimulating liniment. Due to its stimulating effect upon the lymphatic system, circulation and mucous membranes it will have a role in the holistic treatment of many conditions.

Pharmacology:
Alkaloid chelerythrine is anti-inflammatory, anti-microbial, and potentiates analgesic effects of morphine. Interacts with Na/K+ ATPas and inhibit some hepatic enzymes.

Guaiacum officinale, Polygonum bistorta

Constituents: Resin acids (15-20%) (**guaiazulene**, guaiaconic, guaianetic and guaiacic), saponins, polyterpenoid, vanillin, lignans (containing essential oil **guajol**), sterols

Actions: Anti-rheumatic, **anti-inflammatory**, **laxative, diaphoretic, diuretic,** astringent, stimulant, adaptogen, local anesthetic, expectorant, alterative, peripheral circulatory stimulator, bitter,
Medical uses: An anti-inflammatory that promotes circulation and clears toxins from tissues. Is specific for rheumatic complaints, especially where inflammation and pain is present. It is used in chronic rheumatism and rheumatoid arthritis, particularly when an astringent is needed. It will aid in the treatment of gout and may be used as a preventative in it's occurrence. Promotes excretion of uric acid. Can be used internally and topically for gout, joint pain and swelling, chronic rheumatism, RA, OA, duputyrens contracture. Increases circulation and eases pain when rubbed into painful joints.
Pharmacy: Decoction: 1/4 tsp/cup, simmer 20 min, 1/2 cup TID. Tincture: (1:5, 90%), 1-4ml TID. Friction rub: tincture over rheumatic area. Dried wood: 1-2g TID.
Contraindications: Pregnancy, lactation, kidney stones. Caution with gastritis & peptic ulcers, high resin content may lead to stomach upset. Avoid in allergic & acute inflammatory conditions.

Commiphora mukul / Guggul

Guggul is classically used as a detoxifying herb in Ayurveda. The resin secreted by the guggul tree are found to have anti-inflammatory and cholesterol-lowering effects comparable to commercial drugs such as ibuprofen, a type of NSAID, and clofibrate, a drug used for reducing serum cholesterol, in some studies. It may also be useful in relieving pains due to fibromyalgia and rheumatism.
Guggul can be found in their raw forms as gums and resins, and in powder, capsules and tablets. As with any other medicinal herb, consult a knowledgeable herbalist or physician before self-medicating.
Note: Guggul has blood-thinning effects and therefore, should not be used together with other medications that reduce platelet aggregation.

Ocimum sanctum / Holy Basil

A type of basil native to India, holy basil or tulsi not only plays an important role in Ayurveda, it is also revered by worshipers as a symbol of a deity. Traditionally, this herb is used in cooking and also as a medicine to treat cold, flu and sore throat. Holy basil oil is found to possess anti-inflammatory, antioxidant and other medicinal properties that are effective against **arthritis, diabetes, high cholesterol, peptic ulcers** as well as **chemotherapy and radiation poisoning**.
Dried or grounded holy basil leaves can be found in specialty stores as well as on the Internet. Zyflamend, a popular anti-inflammatory herbal formula in the US, also contains holy basil in its unique blend. In places where holy basil is not available, sweet basil can also be used.
Note: Avoid this herb if you are pregnant or trying to conceive.

Withania somnifera / Ashwagandha

The plant Withania somnifera Dunal (Ashwagandha), also known as Indian ginseng, is widely used in the Ayurvedic system of medicine to treat tumors, inflammation, arthritis, asthma, and hypertension. Chemical investigation of the roots and leaves of this plant has yielded bioactive withanolides. Withanolides suppressed NF-κB activation induced by a variety of inflammatory and carcinogenic agents; including TNF-α, IL-1β, doxorubicin, and cigarette smoke condensate. It also suppressed both inducible and constitutive NF-κB activation. The suppression occurred through the inhibition of inhibitory subunit of IκBα kinase activation, IκBα phosphorylation, IκBα degradation, p65 phosphorylation, and subsequent P65 nuclear translocation.
Consequently, withanolide suppressed the expression of TNF-induced NF-κB-regulated gene products such as IAP-1, Bfl-1/A1, and FADD-like IL-1β-converting enzyme-inhibitory protein, COX-2 and ICAM-1, enhanced the apoptosis induced by TNF and chemotherapeutic agents, and suppressed cellular TNF-induced invasion and receptor activator of NF-κB ligand-induced osteoclastogenesis. Withanolide sulfoxide is another active

compound of this plant inhibits COX-2 expression. Withaferin-A (WA) is a bioactive compound derived from W. somnifera, which showed ant-tumor activity through inhibition of Notch-1 signaling and down regulates prosurvival pathways, such as Akt/NF-κB/Bcl-2.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3170500/
EXTENSIVE COVERAGE OF MANY HERBS MOSTLY AYURVEDIC
dentification of Novel Anti-inflammatory Agents from Ayurvedic Medicine for Prevention of Chronic Diseases

Glycyrrhiza glabra / Liquorice

Also known as liquorice, the sweet root of this plant is commonly used to make candies. Healing-wise, the strong anti-inflammatory compounds found in licorice root have been found to be effective against **coughs, colds, mouth ulcers, peptic ulcers** and even **chronic hepatitis infection**.
Licorice extract, 3 triterpenes and 13 flavonoids exhibit evident anti-inflammatory properties mainly by decreasing TNF, MMPs, PGE2 and free radicals
TNF = tumor necrosis factor. TNF is a monocyte-derived cytotoxin that has been implicated in tumor regression, septic shock, and cachexia.[2][3]
MMPs= Matrix metalloproteinases
PGE2 = Prostaglandin E2 (PGE2) is a bioactive lipid that elicits a wide range of biological effects associated with inflammation and cancer. PGE2 exerts diverse effects on cell proliferation, apoptosis, angiogenesis, inflammation and immune surveillance.

Serenoa serulata / Saw Palmetto

Serenoa is native to the southeastern United States, this small palm tree shows promising anti-inflammatory activity against the **enlargement of the prostate gland** in men (a condition known as benign prostatic hyperplasia, or BPH).
Extracts of saw palmetto berries are widely available as tablets and capsules. If you intend to use this herb for BPH, do discuss with your health-care provider first to determine the effective dosage.

The plant contains a number of fatty acids as well as ***phytosterols*** – steroid compounds similar to cholesterol.
Reduced CRP levels (study with pigmogenol)

Tanacetum parthenium / Feverfew

Related to the chrysanthemum, feverfew produces pretty daisy-like flowers with white petals and yellow centers. As its name implies, this anti-inflammatory herb can help to lower fever, and it is also effective in reducing the severity and frequency of headaches and migraines. But taking feverfew during a migraine attack is unlikely to help, as it takes time for the herb to take effect. As such, it is more useful as a preventive measure.
Capsules and tablets of feverfew are readily available. Seek advise from a trained health-care adviser before using this herb.
Feverfew directly inhibited the activity of pro-inflammatory enzymes 5-lipoxygenase, phosphodiesterase-3 and phosphodiesterase-4. PD-Feverfew inhibited the release of pro-inflammatory mediators nitric oxide, PGE(2) and TNF-alpha from macrophages and TNF-alpha, IL-2, IFN-gamma and IL-4 from human peripheral blood mononuclear cells. Additionally, PD-Feverfew inhibited TPA-induced release of PGE(2) from human skin equivalents. In vivo, PD-Feverfew inhibited oxazolone-induced dermatitis, and was more potent than whole Feverfew in reducing TPA-induced dermatitis.

Note: There are some side effects associated with this herb, including mouth ulcers, mild digestive disorders and a rebound in headaches after stopping feverfew. It is also not suitable for expecting mothers.

Tripterygium wilfordii (thunder god vine!)

Thunder god vine is an herb. Its leaves and root are used to make medicine.
Thunder god vine is used for rheumatoid arthritis (RA), heavy menstrual flows, multiple sclerosis, and as a male contraceptive. It is also used for pockets of infection (abscesses), boils, fever, swelling (inflammation), systemic lupus erythematosus (SLE), HIV/AIDS, a skin condition called psoriasis, and a blood vessel disease called Behcet's disease.
Thunder god vine is sometimes applied to the skin for rheumatoid arthritis.
Thunder god vine has also been used non-medicinally as an insecticide against maggots or larvae, and as a rat and bird poison.
Thunder god vine might help rheumatoid arthritis (RA) by relieving swelling (inflammation) and by changing the way the immune system responds to the arthritis. Thunder god vine contains chemicals that might decrease male fertility by changing sperm.
Currently under RA investigation

Bryonia dioica / alba / white bryony

Constituents: Cucurbitacins, alkaloids, polyhydroxy-unsaturated fatty acids, volatile oil, tannins, resin (poisonous).

Adonyne, sedative, immuno-modulating, hypotensive, counter-irritant & rubifacient, diaphoretic, cathartic, emetic, anti-rheumatic, anti-tumour, anti-viral, expectorant

The chloroform extract of Bryonia (CEBL) exhibited significant anti-inflammatory effect in vino studies

Medicinal use: Bryonia is considered to possess toxic effects in relatively small doses, and is therefore infrequently used. It has a specific for the fever of rheumatic fever and for the cardiac complications of rheumatic fever. It is useful in pulmonary oedema and pleurisy with associated cardiac insufficiency. Is also used for rheumatic conditions of the joints. It helps to relieve pain and stiffness by reducing fluid in the joint space. Used topically for joint/muscular pains, sciatica and myalgia.
Pharmacy: Tincture (1:10, 60%), 0.5 – 1ml TID; 10 ml weekly maximum. Dried root: 0.5-2g, TID. Infusion: 1 tsp/cup q 1-2 hours.
Toxicity: Symptoms of toxicity are poorly understood though include: colic, vomiting, diarrhoea, gastro-enteritis, cardiac depression with weak, thready pulse, fall of temperature, mydriasis, congestive headaches, dizziness, delirium, cold perspiration, and death.

Contraindications: Avoid in pregnancy, lactation, with some GIT disorders.

Neem / Divine Tree

Known as the 'Divine Tree' in India, neem oil is used in Ayurvedic medicine to calm inflammatory skin conditions, joint pains and muscle aches. Extracts of neem leaves and seeds have also demonstrated anti-fungal, antibacterial, anti-diabetic and anti-viral properties in various studies.

All parts of this amazing tree can be used. Neem shoots and flowers are eaten as vegetables in India, while the leaves are added to foods as a spice to impart a unique bitter flavor. Neem oil can also be applied topically to treat skin irritations, and sprayed on plants to control pests.

Note: Despite the healing properties of neem, women who are pregnant or wanting to become pregnant should avoid using this herb.

Bromelain

Bromelain is a powerful enzyme found in the most delightful tropical fruit, pineapple.

While most enzymes get broken down in the digestive tract, bromelain actually gets absorbed into our bodies whole, resulting in system-wide effects. Once absorbed into the bloodstream, studies have shown that it can reduce inflammation and reduce pain (though it's not well-understood why this happens).

Eating pineapple can provide you with some bromelain, especially if you juice the hard stem and drink it on an empty stomach. Juicing pineapple in a combo with aloe, ginger and turmeric (see below) is a powerful of anti-inflammatory pain relief remedy.
The German Commission E recommends 80 to 320 mg, 2 to 3 times per day. For specific conditions, higher doses may be prescribed:

Digestive aid: 500 mg per day in divided doses with meals
Injuries: 500 mg, 4 times a day on an empty stomach

Arthritis: 500 to 2,000 mg a day in 2 divided doses

Bromelain has been recommended as an adjuvant therapeutic approach in the treatment of chronic inflammatory, malignant, and autoimmune diseases [36]. In vitro experiments have shown that Bromelain has the ability to modulate surface adhesion molecules on T cells, macrophages, and natural killer cells and also induce the secretion of IL-1β, IL-6, and tumour necrosis factor α (TNFα) by peripheral blood mononuclear cells (PBMCs) [37–43]. Bromelain can block the Raf-1/extracellular-regulated-kinase- (ERK-) 2 pathways by inhibiting the T cell signal transduction [44]. Treatment of cells with bromelain decreases the activation of CD4 (+) T cells and reduce the expression of CD25 [45]. Moreover, there is evidence that oral therapy with bromelain produces certain analgesic and anti-inflammatory effects in patients with rheumatoid arthritis, which is one of the most common autoimmune disease

Euonymus alatus / winged spindle tree

Traditionally in Asia for hyperglycemia, and diabetic complications. antidiabetic actions.
Also:
Alterative, analgesic, anodyne, anthelmintic, anticoagulant, antiphlogistic, antipruritic, astringent blood tonic, carminative, emmenagogue, hypoglycaemic, and purgative. Contain the anticancer compound dulcitol.
Under RA investigation

Pycnogenol (maritime pine bark)

Pycnogenol, like white willow bark, is a nutraceutical material that has been used since ancient times. Pycnogenol is derived from the bark of the maritime pine tree (Pinus maritima) and has been used for more than 2000 years. It has been considered helpful for wound healing, treating scurvy, healing of ulcers, and reducing vascular inflammation. It contains a potent blend of active polyphenols, which includes catechin, taxifolin, procyanidins, and phenolic acids. It is one of the most potent antioxidant compounds currently known.

Pycnogenol inhibits TNF-α–induced NF-kB activation as well as adhesion molecule expression in the endothelium. Grimm et al, recently reported that oral intake of pycnogenol inhibited NF-kB activation in lipopolysaccharide-stimulated monocytes as well, thus decreasing the inflammatory response. It also statistically significantly inhibited matrix metalloproteinase-9.[46] This matrix-degrading enzyme is highly expressed at sites of inflammation, and contributes to the pathogenesis of various chronic inflammatory diseases.

Resveratrol

Resveratrol is a plant-based polyphenol molecule that is found in various concentrations of many different plant sources. The plant is called Japanese Knot weed or Polygonum cuspidatum, and the skins of red wine grapes are believe to have the most concentrated amounts of resveratrol. In plants, resveratrol is generally found in the plant skin and acts as a phytoalexin to protect the plant from infection, excessive UV radiation

and aide in general plant defense. Resveratrol has also been found to have significant anti-mutation, anti-inflammatory, antoxidant and DNA protective actions, when consumed by animals and humans.

Most of the active research with resveratrol has been done in neuro and cardioprotection, but several studies are being reported on resveratrol's use for arthritic joint pain. Elmali et al, reported in 2007 using animals that intra-articular injection of resveratrol protects cartilage and reduces the inflammatory reaction in simulated knee osteoarthritis. The anti-inflammatory properties of resveratrol have also been observed in experimental animal models with paw edema, which is attributed to suppression of inflammatory prostaglandin synthesis.[29] Resveratrol is also a potent and specific inhibitor of TNF-α- and IL-1b-induced NF-kB activation. Resveratrol shows the anti-inflammatory properties as it suppresses COX-2 by blocking NF-kB activation.

Resveratrol is available commercially as a dietary supplement capsule, generally from the P. cuspidatum source. (Japanese Knotweed). The trans-resveratrol is the active form, and although there is not an established dosing range, the typical dose is from 50 to 500 mg daily. Any significant side effect or safety issues with resveratrol have not been established, but due to an experimentally shown anti-platelet effect, caution should be exercised when taking other prescription or herbal anti-platelet or coagulation altering products

Polygonum Cuspidatum var. Japonicus is the species of plant most commonly referred to as Japanese Knotweed. This plant is an invasive species yet has been used traditionally in Chinese and Japanese medicine for its benefits on gastrointestinal health and circulatory health (among some other claims such as cancer prevention). Composition analysis of Japanese Knotweed reveals it to be a vessel for Resveratrol (as well as a few other compounds structurally similar to resveratrol and may act in the same way) and anthraquinone compounds that possess slight laxative effects; like Senna root but less potent.

Most of the effects of Japanese Knotweed can be traced back to either the stilbenes (resveratrol) or the anthraquinones (emodin) for the circulatory and gastrointestinal help, respectively.

Most research on Japanese Knotweed has been pertaining to either suppressing its invasive tendencies, or controlling it to become a large scale producer of Resveratrol for medical or supplemental usage. Limited trials have been conducted in humans, but it appears to have similar effects to resveratrol due to the resveratrol content.

Fish oils

The use of fish oil (in the form of cod liver oil), an omega-3 EFA, for the treatment of muscular, skeletal, and discogenic diseases, can be traced back to the late 18th century as detailed by Curtis et al. Unfortunately, because of the rapid onset of rancidity of this polyunsaturated oil when exposed to air, and hence its disconcerting odor, cod liver oil fell out of favor. With improved extraction techniques, such as using a protective nitrogen blanket and enhanced oxygen-free encapsulation methods, there is less chance of oxidation during the manufacturing process. The therapeutic benefits of fish oil can now be realized without the regurgitation and odor of previous products caused by peroxides and rancid tasting fish oil.

Other cold-pressed EFAs, linseed, pumpkin, hemp, olive…
Glucosamine and chondroitin.

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