Anti-Ox SAP

Science-based formulation for optimal health

Oxidative stress has become a leading cause of several lifestyle diseases and is a side effect of many others. Cardiovascular diseases, ageing, neurodegenerative diseases and arthritic conditions are all associated with oxidative stress due to reactive oxygen species. Although endogenous antioxidant systems combat oxidative stress in the cells, supplementation with external natural antioxidants has shown significant improvement in disease states, such as regulation of cholesterol and glucose metabolism, weight management, and improvement in symptoms of mood disorders. Several natural therapeutic agents have been tested for their safety and efficacy in the management of oxidative stress. These nutraceuticals have been used in traditional systems of medicine for several centuries and have recently been tested through clinical trials for their therapeutic efficacy, safety and optimum dose determination.

Anti-Ox SAP is a synergistic formulation of key evidence-based botanicals that can help promote healthy mood balance and improve cognition. **Anti-Ox SAP** can help reduce systemic inflammation and improve overall health. **Anti-Ox SAP** acts as a cardio protectant by regulating blood pressure.

ACTIVE INGREDIENTS

Each vegetable capsule contains:

Turmeric (*Curcuma longa* L. rhizome) **[Water soluble]** 10% Curcuminoids	300 mg
Green tea (*Camellia sinensis*) leaf extract 75% EGCG	187.5 mg
Grape (*Vitis vinifera*) seed extract 95% proanthocyanidins	62.5 mg

Other ingredients: Vegetable magnesium stearate, silicon dioxide, hypromellose, and purified water.

Contains no: Gluten, soy, wheat, corn protein, eggs, dairy, yeast, citrus, preservatives, artificial flavour or colour, starch, or sugar.

This product is non-GMO and vegan friendly.

Anti-Ox SAP contains 120 capsules per bottle.

DIRECTIONS FOR USE

Adults: Take 2 capsules daily with food or as directed by your healthcare practitioner.

INDICATIONS

Anti-Ox SAP can:

- Be used as an adjunctive therapy for cancer treatment.
- Promote cognition and improve symptoms of depression.
- Help improve inflammatory responses.
- Help improve lipid profile and glucose metabolism and support weight loss.
- Help regulate blood pressure.

KEY ATTRIBUTES

Anti-Ox SAP contains NFH's unique water-soluble curcumin (10%). This water-soluble form has greater stability and enhanced plasma bioavailability (>20 times more bioavailable than the regular curcumin form) for targeted health benefits.

CAUTIONS AND WARNINGS

Consult a healthcare practitioner prior to use if you have gallstones or a bile duct obstruction. Consult a healthcare practitioner prior to use if you have stomach ulcers or excess stomach acid. Consult a healthcare practitioner prior to use if you are pregnant or breastfeeding. Consult a healthcare practitioner prior to use if you have iron deficiency. If you have a liver disorder, consult a healthcare practitioner prior to use. Stop use if you develop symptoms of liver trouble such as yellowing of the skin/eyes (jaundice), stomach pain, dark urine, sweating, nausea, unusual tiredness and/or loss of appetite and consult a healthcare practitioner.

Known adverse reactions: Rare, unpredictable cases of liver injury associated with green tea extract containing products have been reported.

Do not use if seal is broken. Keep out of reach of children.

PURITY, CLEANLINESS, AND STABILITY

All ingredients listed for each **Anti-Ox SAP** lot number have been tested by an ISO 17025 accredited third-party laboratory for identity, potency, and purity.

Scientific Advisory Panel (SAP): adding nutraceutical research to achieve optimum health

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Oxidative stress is characterized by an imbalance between production of reactive oxygen species and the capacity of the body to counteract these reactive oxygen species with the help of antioxidants.[1] An excess of free radicals or an antioxidant insufficiency leads to oxidation of lipid membranes and protein damage, including cell DNA damage. Oxidative stress has been associated with over 100 diseases, either as a triggering factor or a side effect.[2] Cardiovascular diseases, cancer, ageing, neurodegenerative and inflammatory diseases have all been linked to oxidative stress. There is growing evidence that suggests that antioxidant supplementation may provide the additional necessary protection to cell membranes, and combat oxidative stress, thereby maintaining overall health.[1]

Therefore, nutraceutical plant extracts have been gaining more attention in the treatment and management of oxidative stress, thereby reducing the risk or symptoms of cardiovascular diseases, metabolic syndrome, depression and general lifestyle disorders.

NUTRACEUTICALS IN THE MANAGEMENT OF STRESS AND INSOMNIA

Turmeric *(Curcuma longa)* rhizome, 10% curcuminoids

Turmeric has been used extensively in Ayurvedic system of medicine since ancient times, for the treatment of infections, respiratory ailments and childbirth.[3] In recent years, several clinical trials have been conducted to verify the numerous benefits of turmeric. The antioxidant capabilities of turmeric have proven beneficial in several disorders. In a pilot study conducted with 101 patients suffering from chronic kidney disease, administration of 320 mg/day curcumin for 8 weeks attenuated lipid peroxidation and enhanced antioxidant capacity, thereby reducing oxidative stress.[4] Similarly, administration of 80 mg/day curcumin to 19 participants for 4 weeks showed significant reduction in plasma triglyceride and salivary amylase levels; and an increase in salivary radical scavenging capacities and nitric oxide.[5] Plasma lipid level modulation using turmeric has been investigated in several other clinical trials. Administration of 1000 mg curcuminoids daily with piperine showed significant reduction in serum triglycerides, non-HDL cholesterol and lipoprotein (a) over 12 weeks in 118 patients suffering from type 2 diabetes.[6] Turmeric supplementation has shown an improvement in glucose and leptin levels, body mass index, and serum lipid profiles in patients suffering from non-alcoholic fatty liver disease.[7, 8]

Recent studies have studied the efficacy of turmeric in the management and amelioration of rheumatoid arthritis and osteoarthritis. Administration of 250 mg or 500 mg twice daily for 90 days to 24 patients showed significant changes in clinical symptoms at both doses, accompanied with an improvement in erythrocyte sedimentation rate, C-reactive protein, and visual analog scale.[9] These results support previous studies showing prostaglandin and synovial fibroblast inhibition in rheumatoid arthritis patients following curcumin exposure.[10] Although the etiology of osteoarthritis differs from rheumatoid arthritis, turmeric administration in clinical trials has shown beneficial effects on the inflammatory markers and pain management in osteoarthritis.[11, 12]

Along with its anti-inflammatory properties, turmeric has been seen to have various digestive benefits as well. Administration of 500 mg/day of curcumin to peptic ulcer patients for 4 weeks significantly improved dyspepsia symptoms compared to placebo.[13] Turmeric chips have also been tested and proven efficacious against chronic periodontitis.[14]

One of the most significant impacts of turmeric is the neuroprotective role played by curcumin, with several studies showing improved cognition and a reduction in major depression symptoms. In a 12-month randomized placebo-controlled trial with 96 individuals, ingestion of 1500 mg of curcumin formulation daily showed a significant improvement in cognitive assessment.[15] Administration of 500 mg twice a day for 8 weeks to 56 individuals suffering from major depressive disorder significantly improved depressive symptoms and perceived depression.[16] Similar studies have proven the beneficial effects of curcumin in amelioration of depression.[17,18]

A crucial aspect of nutrient metabolism is its bioavailability and the clinical efficacy of curcumin has been limited due its poor bioavailability stemming from its instability at low intestinal pH values, and low water solubility. Several approaches exist that help improve plasma bioavailability of curcumin and increasing the water solubility of curcumin is suggested to increase bioavailability by multiple folds, up to the order of > 20 folds.[19] Water-soluble curcumin (10%) is prepared by emulsification of turmeric oleoresin with polysorbate and subsequent dilution with maltodextrin and dissolution in water followed by spray drying. This water-soluble form has greater stability and enhanced plasma bioavailability for targeted health benefits.

Green tea (Camellia sinensis) leaf extract, 75% EGCG

Camellia sinensis, commonly known as green tea, was originally used as a therapeutic agent against various illnesses in traditional Chinese culture.[20] Recent studies have scientifically proven the antioxidant and anti-inflammatory properties of green tea. Consumption of 450 mg/day of green tea extract for six weeks significantly reduced oxidative stress in 18 athletes.[21] The anti-inflammatory properties of green tea have been found effective against numerous health complications. Supplementation with 1500 mg/day of green tea in 64 post-adolescent women for 4 weeks significantly reduced inflammatory lesions.[22] Similar anti-inflammatory action was observed in other clinical trials, where a reduced disease activity was seen in systemic lupus erythematosus patients.[23] The anti-inflammatory effect is also accompanied by an immunomodulatory activity, where 300 mg of green tea extract over 14 days increased leukocyte activity and total plasma antioxidant status.[24]

These beneficial properties of green tea have an impact on overall health as well. In a double-blind crossover study where 19 men ingested 1g green tea extract, an acute increase in plasma antioxidant activity was seen after an hour, followed by reduced LDL oxidation, thereby reducing atherosclerotic risk.[25] Other studies have demonstrated the ability of green tea extract to modify serum lipid profiles, where ingestion of 1315 mg of green tea extract 4 times a day for 12 months significantly reduced circulating total cholesterol and LDL cholesterol concentrations in 538 postmenopausal women.[26] The lipid modulating effects are also seen in significant weight loss and decreased BMIs, with inhibition of ghrelin secretion and increased adiponectin levels.[27]

Grape *(Vitis vinifera)* seed extract, 95% proanthocyanidins

Grape seed extract is known to be a rich source of antioxidants in the form of polyphenols and have shown to be efficacious in the inhibition of metabolic syndrome risk factors such as hyperlipidemia, hypertension and hyperglycemia.[28] This has been demonstrated by recent clinical trials. In a randomized clinical trial conducted with 87 patients, administration of 100 mg grape seed extracts every 6 hours for 24 hours before surgery had significant antioxidant effects comparable to that of vitamin C, with reduced risks associated with cardiopulmonary bypass surgery.[29] Along with antioxidant activity, grape seed extract also shows cardioprotective effects via regulation of blood pressure. Administration of 300 mg grape seed extract daily to 18 pre-hypertensive participants over a period of 12 weeks significantly reduced systolic and diastolic blood pressure.[30] A similar effect was also observed in 96 women undergoing menopause, where 100 mg/day or 200 mg/day proanthocyanidin consumption for 8 weeks significantly reduced blood pressure, increased muscle mass, and improved the psychological and physical symptoms of menopause.[31] Grape seed extract was also found to inhibit leg swelling in women during prolonged sitting.[32]

The cardioprotective effects of grape seed extract have been explored further and show far reaching implications in management of diseases such as type 2 diabetes. In a trial conducted with 32 type 2 diabetes patients, ingestion of 600 mg/day of grape seed extract for 4 weeks showed significant reduction in fructosamine, glutathione, and total cholesterol concentration, known markers of inflammation and glycaemia, suggesting a therapeutic role of grape seed extract in reducing overall cardiovascular risk in type 2 diabetic patients.[33]

SYNERGISM FOR OPTIMAL EFFICACY

Research evidence suggests that supplementing a combination of key nutraceuticals such as curcumin, Green tea extract and Grape seed extract can promote the maintenance of good health.[34, 35]

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