Seabuckthorn SAP

Science-based omega-7 fatty acid

Seabuckthorn SAP contains a source of omega-7 fatty acids also known as palmitoleic acid.* Seabuckthorn seed oil provides essential fatty acids for the maintenance of good health.* Seabuckthorn (SBT) is a deciduous shrub that is native to both Europe and Asia.*[1] SBT has been used in both Tibetan and Mongolian traditional medicines for helping with fatigue and immune regulation.*[1] Omega-7 oils have been shown to provide benefit in the gastrointestional system, immune system, and cardiovascular system, as well as supporting healthy hair, skin, eyes, and nails.*

SUPPLEMENT FACTS

Serving Size: 1 Softgel — **Servings:** 30 or 60

	Amount Per Serving	% Daily Value
Seabuckthorn (*Hippophae rhamnoides*) fruit oil, 24.0% palmitoleic acid, 20.0% oleic acid, 10.0% linoleic acid	600 mg	**
Seabuckthorn (*Hippophae rhamnoides*) seed oil, 20.0% oleic acid, 35.0% linoleic acid, 20.0% *alpha*-linolenic acid	400 mg	**

**Daily Value not established

Other ingredients: Vitamin E from D-*alpha* tocopherol (non-GMO sunflower) in a softgel made of bovine gelatin, glycerin, and purified water.

All oils are supercritical CO_2 extracted from organic berries grown on the Qinghai-Tibetan plateau.

This product is non-GMO.

Contains no: Gluten, soy, wheat, corn, eggs, dairy, yeast, citrus, preservatives, artificial flavor or color, starch, or sugar.

Seabuckthorn SAP contains 30 softgels per bottle.

DIRECTIONS FOR USE

Adults: Take 1 softgel daily or as directed by your healthcare practitioner.

INDICATIONS

Seabuckthorn SAP:

- May help improve natural killer cell activity caused by stress.*
- May assist in gastric healing with ulcerations or erosions.*
- Has cardioprotective and antiatherogenic properties.*
- May provide protection against hypoxia-induced pulmonary vascular leakage.*

CAUTIONS AND WARNINGS

Consult a healthcare practitioner prior to use if you are pregnant or breast-feeding, or if you are taking blood thinners or medication or natural health products that could increase the risk of bleeding. Consult a healthcare practitioner for use beyond 3 months.

KNOWN ADVERSE REACTIONS

Hypersensitivity/allergy is known to occur; in which case, discontinue use.

PURITY, CLEANLINESS, AND STABILITY

All ingredients listed for all **Seabuckthorn SAP** lot numbers have been tested by a third-party laboratory for identity, potency, and purity.

*** These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

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

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SEABUCKTHORN SEED OIL AND GASTRIC ULCERATIONS

A study was performed looking at the effectiveness of five different treatments in healthy dogs with dexamethasone-induced gastric ulcerations and erosions (GUE).[2] The five treatment groups received oral administration of lansoprozole (1.5 mg/kg), sucralfate (1 g/animal), misoprostol (10 µg/kg), famotidine (1 mg/kg), and seabuckthorn seed oil (5 mL/animal), twice a day respectively.[2] Results were based on gastroendoscopy, melena, and observed appetite changes. Based on gastroendoscopy, complete healing of GUE lesions was seen the earliest in the seabuckthorn (SBT) group, followed by the famotidine, lansoprazole, misoprostol, and sucralfate groups.[2] The SBT group had melena until day 3, both the lansoprazole and famotidine treated groups had melena until day 6, and the sucralfate and misoprostol group until day 9.[2] Animals in all groups showed a marked improvement in appetite.[2]. Researchers concluded that seabuckthorn oil was the best therapeutic agent for dexamethasone-induced GUE in dogs, followed by famotidine, lansoprazole, misoprostol, and sucralfate.[2]

SEABUCKTHORN OIL, CHRONIC STRESS, AND OXIDATION

During times of chronic stress, natural killer (NK) cell activity can be suppressed, an effect that may be related to the influence of stress on the neuroendocrine-immune system. A study looked at the effects of SBT oil in terms of cytotoxicity and quantity of NK cells in the blood of rats under chronic stress.[1] Researchers gave SBT oil to rats with chronic stress, and saw an increase in NK-cell quantities and cytotoxicity, as well as mechanisms on the neuroendocrine-immune network.[1] Results also showed that SBT oil in this population could suppress cortisol, ACTH, IL-1β and TNF-α levels, in addition to increasing 5-HT and IFN-γ serum levels.[1] Researchers concluded that intake of SBT oil in rats with chronic stress can increase NK-cell cytotoxicity by upregulating the expression of perforin and granzyme B, and resulting in effects on the neuroendocrine-immune network.[1]

In another study, researchers explored the effects of SBT seed oil on the lipid profile, histology, and hematology to rabbits fed thermally oxidized vegetable ghee.[3] Results showed that oxidized vegetable ghee increases serum total cholesterol, LDL-cholesterol, and triglycerides, and decreases serum glucose; it also produces toxic effects in the liver and hematological parameters.[3] Supplementation with SBT seed oil showed improvements in all parameters, namely a reduction in total cholesterol, LDL-cholesterol, and triglycerides, and an increase in serum glucose and body weight of the rabbits.[3] The SBT seed oil also reduced the toxic effects and degeneration seen in the liver, and therefore provides protection from thermally oxidized lipids that induce oxidative stress.[3]

In a study, the effects of SBT oil in cardiotoxicity induced by isoproterenol (ISO) was examined. Rats were given SBT oil (5, 10, and 20 ml/kg/d) or control orally for 30 days, as well as ISO on the 29th and 30th days.[4] On the 31st day, the control rats showed cardiac dysfunction, increased lipid peroxidation, and depletion of cardiac injury marker enzymes.[4] The light microscope demonstrated myocardial necrosis, edema, and inflammation.[4] Supplementation of SBT oil at 20 ml/kg/d significantly modulated both hemodynamic and antioxidant derangements, as confirmed by both the structural and histopathologic examinations.[4] Researchers concluded that SBT oil mitigates ISO-induced cardiac injury in rats via its free radical–scavenging and antioxidant activities.[4]

The antiatherogenic activity of SBT seed oil was demonstrated in an animal study providing high-cholesterol diets for 60 days.[5] Twenty healthy male rabbits were divided into four groups: group 1 as control, group 2 received SBT seed oil, group 3 received 1% cholesterol, and group 4 received 1% cholesterol and SBT seed oil.[5] Blood total cholesterol (TC), LDL-cholesterol, HDL-cholesterol, and triglyceride (TG) levels, as well as the accumulation of cholesterol in the aorta, were measured both before and after the administration of SBT seed oil.[5] Researchers also studied the vasorelaxant activity of the seed oil in vitro using aortic ring model technique. In normal rabbits fed SBT seed oil for 18 days, a significant decline in plasma cholesterol, LDL-C, atherogenic index (AI), and LDL/HDL ratio was observed.[5] The vasorelaxant activity of the aorta, HDL-C levels and HDL-C/TC ratio (HTR) were significantly increased.[5] In animals fed cholesterol, the TC, TG, LDL-C, and AI were significantly increased, but responded with a decline after SBT seed oil administration.[5] The acetylcholine-induced vasorelaxant activity was decreased significantly in cholesterol-fed animals, and could be restored to normal with SBT seed oil administration.[5] Researchers concluded that supercritically extracted SBT seed oil had significative cardioprotective activity and is antiatherogenic.[5]

SEABUCKTHORN OIL AND DRY EYES

The condition known as evaporative dry eye is associated with meibomian gland dysfunction as well as abnormalities of the tear-film lipids.[6] There has been a positive association documented between improvement in dry eye and the intake of linoleic acid, γ-linolenic acids, and *n*-3 fatty acids.[6] Seabuckthorn oil contains linoleic, α-linolenic acids, and antioxidants, and has been shown to be beneficial for dry eye.[6]

In a double-blind, placebo-controlled trial, researchers explored the effects of 2 g/d of SBT oil in women of ages 20–75 suffering from dry eye.[7] Clinical tests for dry eye and symptom follow-ups were performed in both groups.[7] The maximum intensities of redness and burning were lower in the SBT oil group, but only the change in burning was statistically significant, not the redness.[7] Researchers concluded that SBT oil attenuates an increase in tear-film osmolarity during the cold season, which had a positive effect on dry eye symptoms.[7]

The effect of supplementation with SBT oil on the composition of tear-film fatty acids in patients with dry eye was studied.[6] One hundred participants were randomized to a double-blind, placebo-controlled study, of which 86 patients completed the study.[6] Participants consumed either 2 g/d of SBT or placebo for three months.[6] Gas chromatography was used to analyse the tear-film fatty acids at the start, middle, and end of the intervention and one to two months later.[6] There were no differences in fatty acid proportions observed between groups.[6] The results indicate that the positive effects of SBT oil on dry eye are not mediated via changes in tear-film fatty acids.[6] Therefore, the researchers suggested that the carotenoids, tocopherols, or eicosanoids produced from the fatty acids in the oil may be the route of benefit on inflammation and differentiation of the meibomian gland cells.[6]

SEABUCKTHORN OIL AND ACCLIMATIZATION

Cerebral and pulmonary syndromes may develop in acclimatized individuals shortly after ascent to high altitude, resulting in high-altitude illness, effects that may occur due to extravasation of fluid from intra- to extravascular space in the brain, lungs, and peripheral tissues.[8] The objective of the present study was to evaluate the potential of SBT (*Hippophae rhamnoides* L.) leaf extract (LE) in curtailing hypoxia-induced transvascular permeability in the lungs by measuring lung water content, leakage of fluorescein dye into the lungs, and further confirmation by quantitation of albumin and protein in the bronchoalveolar lavage fluid (BALF).[8] Exposure of rats to hypoxia caused a significant increase in the transvascular leakage in the lungs. The SBT LE–treated animals showed a significant decrease in hypoxia-induced vascular permeability, evidenced by decreased water content and fluorescein leakage in the lungs, and decreased albumin and protein content in the BALF.[8] The SBT LE was also able to significantly attenuate hypoxia-induced increase in the levels of proinflammatory cytokines and decrease hypoxia-induced oxidative stress by stabilizing the levels of reduced glutathione and antioxidant enzymes.[8] Pretreatment of the extract also resulted in a significant decrease in the circulatory catecholamines and significant increase in the vasorelaxation of the pulmonary arterial rings as compared with the controls.[8] Further, the extract significantly attenuated hypoxia-induced increase in the VEGF levels in the plasma, BALF (ELISA), and lungs (immunohistochemistry).[8] These observations suggest that SBT LE is able to provide significant protection against hypoxia-induced pulmonary vascular leakage.[8]

REFERENCES

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