ADVANCED ORTHOMOLECULAR RESEARCH

AOR CODE: AOR04238

Premium

Liver Support

$45.95 CAD

Protects and Maintains a Healthy Liver

- Stimulates liver regeneration and detoxification
- Protects liver tissue from damage and toxins
- Clinically researched herbs and nutrients

Gluten Free Non-GMO Vegetarian Detoxification

AOR Code	Variant	Price
AOR04238	90 VEGI-CAPS	$45.95
AOR04239	180 VEGI-CAPS	$67.95

Details

Responsible for over 500 biological functions such as detoxification, energy storage, bile production, hormone regulation and the processing of nutrients absorbed from the diet, the liver may just be the body's hardest working organ. Clearly, proper liver function is essential to good health. Unfortunately many apparently healthy people have suboptimal liver function, a factor which can lead to many of the modern illnesses that people face today.

Liver Support contains four powerful ingredients known to support the liver: milk thistle extract, N-Acetyl-Cysteine (NAC), Phyllanthus niruri extract, and sulforaphane glucosinolate (SGS) from broccoli extract. These ingredients have collectively been shown to protect the liver from toxins, combat viral infections, stimulate liver regeneration, enhance levels of glutathione, the body's most powerful antioxidant, and support detoxification processes.

Those with liver illnesses or suboptimal liver function and those looking for a formula to support liver detoxification can benefit from Liver Support, as well as those looking to protect against liver damage caused by alcohol, drugs and environmental toxins.

Label Info

Discussion

Liver Support contains ingredients that help to support liver function and contains antioxidants for the

maintenance of good health.

Product Variation

Product Code	Size
AOR04238	90 VEGI-CAPS
AOR04239	180 VEGI-CAPS

Supplements Facts

Serving Size: 1 Capsule	Amount	% Daily
Milk Thistle dry extract (40% silymarin, calculated as silibinin)	117 mg	
Phyllanthus amarus	200 mg	
N-Acetyl-L-Cysteine (NAC)	200 mg	

broccoli extract (100 mg), sodium stearyl fumarate. Capsule: hypromellose.

Guarantees

AOR™ guarantees that all ingredients have been declared on the label. Contains no wheat, gluten, corn, nuts, peanuts, sesame seeds, sulphites, mustard, soy, dairy, eggs, fish or shellfish.

Adult Dosage

Take 1 capsule three times daily with meals providing protein, or as directed by a qualified health care practitioner. Use for a minimum of 3 weeks to see beneficial effects.

Cautions

Do not use if you are pregnant or breastfeeding. Consult a health care practitioner prior to use if you have a liver disease, cystinuria, if you are taking nitroglycerin or antibiotics, if symptoms persist or worsen after use, or for use beyond 1 month. Hypersensitivity, such as an allergy, is known to occur, in which case, discontinue use.

Source

Natural botanical extracts

Pharmaceutical synthesis

Main Application

Liver regeneration

Detoxification

Disclaimer

The information and product descriptions appearing on this website are for information purposes only, and are not intended to provide or replace medical advice to individuals from a qualified health care professional. Consult with your physician if you have any health concerns, and before initiating any

new diet, exercise, supplement, or other lifestyle changes.

Research

Background

The ingredients found in Liver Support have collectively been shown in studies to protect the liver from toxins, stimulate liver regeneration, inhibit lipid peroxidation, enhance levels of glutathione and induce cytochrome P450, a part of phase II detoxification.

Milk Thistle Extract- Milk thistle has been used as a traditional remedy for over 2000 years. Milk thistle protects the liver against toxins and has been used successfully to treat chronic liver diseases.

N-Acetyl-Cysteine – NAC is a precursor to glutathione, one of the most important antioxidants of the body. Glutathione is a protein made from 3 amino acids and its synthesis is limited by the availability of cysteine. NAC protects the liver against free radicals and toxins and is now used to prevent liver injury associated with acetaminophen poisoning which is the number one cause of calls to poison centers in the US.

Phyllanthus amarus/niruri (PA/PN) – PA is a perennial herb common in hot central and southern areas of the Indian Subcontinent. One of the most impressive applications of PA is in the treatment of certain viruses, particularly hepatitis B. Hepatitis B is a virus that affects the liver, causing inflammation and jaundice, possibly leading to liver cirrhosis, cancer, or even death.

Sulforaphane glucosinolate (SGS) is a naturally occurring isiothiocyanate found in the brassica family of vegetables, such as broccoli. Sulforaphane has been shown to stimulate the natural defenses of the body to prevent or ameliorate chronic disease. It is a natural anti-oxidant and a potent inducer of phase II liver detoxification enzymes. These effects give sulforaphane not only potent hepatoprotective properties, but also anti-carcinogenic properties.

Liver Function

The liver is the largest gland and the most important detoxification organ in the body. More than 500 functions have been attributed to the liver. These functions include the production of bile and the secretion of glucose, proteins, vitamins and fats. The liver also stores energy in the form of glycogen and decomposes red blood cells and unwanted proteins. These important functions explain why the liver has two distinct blood supplies, one to bring oxygen to the liver; the other (called the hepatic portal system) to bring nutrients and molecules absorbed from the gastrointestinal tract to the liver for processing and detoxification.

Prevalence of Chronic Liver Disease

Liver disorders are a major health problem in North America. It should come as no surprise that roughly 6% of apparently healthy people have abnormal liver function. While most of the severe liver disorders are related to alcohol consumption, viral hepatitis and hemochromatosis, most of us should be taking better care of our liver because when we overindulge, our liver suffers. Ten to fifteen percent of North Americans drink excessively and five percent of us have a genetic disorder known as Gilbert’s syndrome which causes abnormal bilirubin metabolism. The liver produces or processes most of the nutrients and compounds used by the body; it needs to be looked after.

• Cirrhosis of the Liver: 400,000 people in the USA 1976-80 (NIH, 1994).

• Alcoholic liver disease: More than 2 million Americans (NIAAA).

• Alcohol is the cause of 44.7% of all death due to liver disease.

• Chronic Hepatitis C: Almost 4 million Americans have antibodies indicating infection or prior exposure (NIDDK).

• Chronic Hepatitis B: 750,000 people in the United States (NIAID).

• Autoimmune Hepatitis: 1,156 people in the USA in 1996.

• Hemochromatosis: more than 1 million Americans (CDC); 5 per 1000 in Caucasians (NIDDK).

• Primary biliary cirrhosis: 9,232 people in the USA in 1996.

• Sarcoidosis: 20 per 100,000 overall; 5 in 100,000 caucasians; 40 out of 100,000 African Americans; Scandinavia 64 out of 100,000 people

• Liver cancer: 16,600 annual cases (SEER 2002 estimate)

• Sarcoidosis: 20 per 100,000 in the city, less in the country.

The effects of alcohol on the liver:

• Most liver disorders are linked to ethanol, hepatitis C and hemochromatosis. In cases of hemochromatosis, vitamin C should be avoided because it increases iron absorption.

• Chronic ethanol administration alters methionine metabolism in the liver, which increases SAH levels. Elevations of SAH levels in the liver are linked to hepatotoxicity and apoptosis and increases homocysteine levels in plasma. Methylating agents counteract this pathological change.

• Ethanol induces oxidative stress and leads to the depletion of antioxidants. Ethanol also alters the fluidity of the cellular membrane of hepatocytes.

• Ethanol increases inflammation through the release of inflammatory cytokines.

• Heavy alcohol consumption often leads to a condition known as fatty liver. This increases the potential for oxidative stress which leads to further inflammation and fibrosis.

Research

Milk Thistle

Acute hepatitis and milk thistle

A study intended to determine whether silymarin improves signs, symptoms and laboratory testing

results in individuals with clinically acute hepatitis. The etiology of the illness was not a concerning factor in the investigation. It was found that the patients who took silymarin had earlier improvement in clinical and subjective markers of biliary excretion. Although a modest sampling size was used and there were various etiologies for clinically acute hepatitis, the outcome of the study suggested that standard recommended silymarin doses are safe and could be potentially effective in decreasing symptoms of acute clinical hepatitis even without a lack of a detected effect on underlying hepatocellular inflammatory process biomarkers.

Milk thistle protects the liver during chemotherapy

Another study found that milk thistle was beneficial in the treatment of inflammation in the liver of patients who were receiving chemotherapy. The study which was published in Cancer, a peer-reviewed journal of the American Cancer Society, stated that milk thistle could permit patients to receive potent amounts of chemotherapy without injuring their liver. Regardless of limited study data, the herb is frequently used for the chemotherapy treatment associated liver problems.

In this randomized, double blind, controlled study, children with acute lymphoblastic leukemia (ALL) were given milk thistle concurrently while receiving chemotherapy. Fifty children with ALL were participants in the study and were randomized to be administered milk thistle or placebo for 28 days. From the start of the investigation, all children displayed evidence of inflammation in their liver as was measured by elevations in the liver enzymes within the blood. The milk thistle also seemed to help keep fewer patients from having to take reduced doses of their medicines. Chemotherapy doses were decreased in 61 percent of those taking the milk thistle, compared with 72 percent of the placebo group.

Additionally, milk thistle was demonstrated to be safe for consumption. The effects of combining milk thistle with chemotherapy on leukemia cells grown in the laboratory, was also studied. Researchers found that milk thistle does not interfere with beneficial effects of chemotherapy.

Recent studies have also suggested that milk thistle promotes normal cell growth, helps to regulate blood sugar, and has cardioprotective effects.

N-Acetyl-Cysteine

In a randomized clinical trial which was conducted on 60 new TB patients who were aged 60 years or more, it was found that NAC protects against anti-TB drug-induced hepatotoxicity. The patients were given a daily drug dose regimen of isoniazid, rifampicin, pyrazinamide, and ethambutol. 28 patients were treated with the same drugs as well as NAC, this group showed no signs of hepatotoxicity, while 11 patients in the control group did on the fourth day of treatment.

Phyllanthus amarus (PA)

The effect of Phyllanthus for the treatment of infective hepatitis has been studied clinically in 160 patients suffering from jaundice. Of the 160 cases, 101 were completely cured while there were 59 dropouts. PA has also been documented to protect the liver from damage by a variety of chemical liver toxins and oxidative stress.

Market Trends

The most common supplement purchased for liver health and liver detoxification is milk thistle. Milk thistle is even used in vet clinics for animal liver health. Other nutrients used for liver health include artichoke, turmeric, sulphoraphane and d-glucarate among others.

AOR Advantage

If you are looking for a complete liver formula that will support liver function and detoxification while promoting liver regeneration, look no further – AOR's Liver Support is based on the latest research trials and contains ingredients shown to do exactly that, all in one formula.

References

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Yoxal V, Kentish P. Coldham N, Kuhnert N, Sauer MJ, Ioannides C. Modulation of hepatic cytochromes P450 and phase II enzymes by dietary doses of sulforaphane in rats: Implications for its chemopreventive activity. Int J Cancer. 2005; 117(3): 356-362.

Abstract

N-acetylcysteine attenuates oxidative stress and liver pathology in rats with non-alcoholic steatohepatitis

World J Gastroenterol 2007 October 14; 13(38): 5127-5132.

D Thong-Ngam, S Samuhasaneeto, O Kulaputana, N Klaikeaw

AIM: To evaluate attenuating properties of N-acetylcysteine (NAC) on oxidative stress and liver pathology in rats with non-alcoholic steatohepatitis (NASH).

METHODS: Male Sprague-Dawley rats were randomly divided into three groups. Group 1 (control, n = 8) was free accessed to regular dry rat chow (RC) for 6 wk. Group 2 (NASH, n = 8) was fed with 100% fat diet for 6 wk. Group 3 (NASH NAC20, n = 9) was fed with 100% fat diet plus 20 mg/kg per day of NAC orally for 6 wk. All rats were sacrificed to collect blood and liver samples at the end of the study.

RESULTS: The levels of total glutathione (GSH) and hepatic malondialdehyde (MDA) were increased significantly in the NASH group as compared with the control group (GSH; 2066.7 ± 93.2 vs 1337.5 ± 31.5 mmol/L and MDA; 209.9± 43.9 vs 3.8 ±1.7 mmol/g protein, respectively, $P < 0.05$). Liver histopathology from group 2 showed moderate to severe macrovesicular steatosis, hepatocyte ballooning, and necroinflammation. NAC treatment improved the level of GSH (1394.8 ± 81.2 mmol/L, $P < 0.05$), it did not affect MDA (150.1 ± 27.0 mmol/g protein), but led to a decrease in fat deposition and necroinflammation.

CONCLUSION: NAC treatment could attenuate oxidative stress and improve liver histology in rats with NASH.

Protein isolate from the herb, Phyllanthus niruri L. (Euphorbiaceae), plays hepatoprotective role against carbon tetrachloride induced liver damage via its antioxidant properties.

Food Chem Toxicol. 2007 May;45(5):817-26.

Bhattacharjee R, Sil PC.

Phyllanthus niruri L. (Euphorbiaceae) (P. niruri) is a well-known hepatoprotective herbal plant. In the present study, hepatoprotective potential of the protein isolate of P. niruri was investigated against carbon tetrachloride (CCl(4)) induced liver damage in vivo. Protein isolate of P. niruri was intraperitoneally injected in mice either prior to (preventive) or after the induction of toxicity (curative). Levels of different liver marker enzymes in serum and different anti-oxidant enzymes, as well as lipid peroxidation products and glutathione (GSH) in liver homogenates were measured in normal, control (toxicity induced) and protein isolate treated mice. Administration of CCl(4) increased the serum glutamate pyruvate transaminase (GPT) and alkaline phosphatase (ALP) levels of mice sera along with increased lipid peroxidation and reduced levels of antioxidant enzymes superoxide dismutase (SOD) and catalase (CAT) in the liver. Treatment with the protein isolate of P. niruri significantly altered these changes to almost normal. The protein isolate also showed protective properties as was evidenced in histopathological studies. Results suggest that the protein isolate of P. niruri protects liver tissues against oxidative damage and somehow helps stimulating repair mechanism present in liver. It could be used as an effective hepatoprotector against CCl(4) induced liver damage.

Modulation of hepatic cytochromes P450 and phase II enzymes by dietary doses of sulforaphane in rats: Implications for its chemopreventive activity.

Yoxal V, Kentish P. Coldham N, Kuhnert N, Sauer MJ, Ioannides C.

Int J Cancer. 2005; 117(3): 356-362

The principal objectives of our study were to ascertain whether sulforaphane, at dietary levels of intake, modulates rat hepatic cytochrome P450 and phase II enzyme systems and to evaluate the impact of such changes in the chemopreventive activity of this isothiocyanate. Animals were exposed to sulforaphane in their drinking water for 10 days, equivalent to daily doses of 3 and 12 mg/kg. Depentylation of pentoxyresorufin decreased and was paralleled by a decline in CYP2B apoprotein levels. At the higher dose, erythromycin N-demethylase activity declined and was accompanied by a similar decrease in CYP3A2 apoprotein levels. However, sulforaphane treatment upregulated CYP1A2 levels, determined immunologically, but the dealkylations of methoxy- and ethoxyresorufin were not similarly increased. Hepatic S9 preparations from sulforaphane-treated rats were less effective than control preparations in converting IQ (2-amino-3-methylimidazo-[4,5-f]quinoline) to mutagenic intermediates in the Ames test. To clarify the underlying mechanism, in vitro studies were undertaken. In beta-naphthoflavone-treated rats, the inhibition by sulforaphane of the O-dealkylations of methoxy- and ethoxyresorufin was enhanced if the isothiocyanate was preincubated in the presence of NADPH. It may be inferred that sulforaphane induces hepatic CYP1A2 but the enzyme is not catalytically competent because of bound sulforaphane metabolite(s). Finally, sulforaphane stimulated, in a dose-dependent fashion, quinone reductase but failed to influence glutathione S-transferase, epoxide hydrolase and glucuronosyl transferase activities. It is concluded that, even at dietary doses, sulforaphane can modulate the xenobiotic-metabolising enzyme systems, shifting the balance of carcinogen metabolism toward deactivation, and this may be an important mechanism of its chemopreventive activity.

In vitro studies on the effect of certain natural products against hepatitis B virus.

Indian J Med Res 1990 Apr; 92: 133-8.

Mehrotra R, Rawat S, Kulshreshtha DK, Patnaik GK, Dhawan BN.

Picroliv (active principle from Picrorrhiza kurroa), its major components picroside I, catalpol, kutkoside I, kutkoside, andrographolide (active constituent of Andrographis paniculata), silymarin and Phyllanthus niruri extract were tested for the presence of anti hepatitis B virus surface antigen (anti HBs) like activity. HBsAg positive serum samples obtained from hepatitis B virus (HBV) associated acute and chronic liver diseases and healthy HbsAg carriers were used to evaluate the anti-HBs like activity of compounds/extract. The latter were mixed with serum samples and incubated at 37 degrees C overnight followed by HBsAg screening in the Elisa system. A promising anti-HBsAg like activity was noted in picroliv (and its major components) catalpol, P. niruri, which differed from the classical viral neutralization. Picroliv also inhibited purified HBV antigens (HBsAg and HBsAg) prepared from healthy HBsAg carriers. The in vitro testing system appears to be a suitable model to

identify an agent active against HBV, prior to undertaking detailed studies.