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MORINGA LITE VEG CAPS ; NATURE'S BLEND OF ANTIOXIDANT NUTRIENTS TO MAINTAIN OPTIMUM HEALTH & WELLBEING

Govind Shukla*, Neha S.Giri, Meghla R, C.J. Sampath Kumar

Lactonova Nutripharm (P) Ltd, Makers of MORINGA LITE veg caps 81/3, IDA Mallapur, Hyderabad, Telangana, India-500 076.

ABSTRACT

Oxidation is a chemical reaction that transfers electrons from a substance to an oxidizing agent Oxidation reactions can produce free radicals. In turn, these radicals can start chain reactions. An antioxidant is a molecule capable of inhibiting the oxidation of other molecules Antioxidants terminate the chain reactions by removing free radical intermediates, and inhibit other oxidation reactions. They do this by being oxidized themselves, so antioxidants are often called as reducing agents such as thiols, ascorbic acid or polyphenols. Antioxidants are widely used as ingredients in dietary supplements and have been investigated for the prevention of diseases such as cancer, coronary heart disease and even altitude sickness. Antioxidants are our first line of defense against free radical damage, and are critical for maintaining optimum health and wellbeing. The need for antioxidants becomes even more critical with increased exposure to free radicals. Pollution, cigarette smoke, drugs, illness, stress, and even exercise can increase free radical exposure. Because so many factors can contribute to oxidative stress, individual assessment of susceptibility becomes important. Many experts believe that the Recommended Dietary Allowance (RDA) for specific antioxidants may be inadequate and, in some instances, the need may be several times the RDA. As part of a healthy lifestyle and a well-balanced, wholesome diet, antioxidant supplementation is now being recognized as an important means of improving free radical protection. Damage to cells caused by free radicals is believed to play a central role in the aging process and in disease progression. The present paper Reviews the Role of MORINGA LITE veg caps, Nature's blend of Antioxidant Nutrients in maintaining optimum health & wellbeing.

Key Words: MORINGA LITE veg caps, Antioxidant Nutrients, optimum health & wellbeing.

INTRODUCTION

To protect the cells and organ systems of the body against reactive oxygen species, humans have evolved a highly sophisticated and complex antioxidant protection system. It involves a variety of components, both endogenous and exogenous in origin, that function interactively and synergistically to neutralize free radicals.

These components include:

• Nutrient-derived antioxidants like ascorbic acid (vitamin C), tocopherols and tocotrienols (vitamin E), carotenoids, and other low molecular weight compounds such as glutathione and lipoic acid.

• Antioxidant enzymes, e.g., superoxide dismutase, glutathione peroxidase, and glutathione reductase, which catalyze free radical quenching reactions.

• Metal binding proteins, such as ferritin, lactoferrin, albumin, and ceruloplasmin that sequester free iron and copper ions that are capable of catalyzing oxidative reactions.

• Numerous other antioxidant phytonutrients present in a wide variety of plant foods

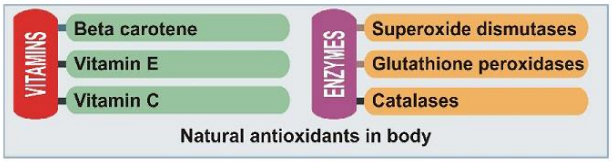


Fig 1. Natural Antioxidants In Body

Corresponding Author

Govind Shukla
Email: govindbbd@gmail.com

Table 1. Various ROS and Corresponding Neutralizing antioxidants

ROS	Neutralizingantioxidants
Hydroxyl radical	Vitamin C, glutathione, flavonoids, lipoic acid
Superoxide radical	Vitamin C, glutathione, flavonoids, SOD
Hydrogen peroxide	Vitamin C, glutathione, beta carotene, vitamin E, CoQ10, flavonoids, lipoic acid
Lipid peroxides	Beta carotene, vitamin E, ubiquinone, flavonoids, glutathione peroxidase

Dietary Antioxidants

Vitamin C, vitamin E, and beta carotene are among the most widely studied dietary antioxidants. Vitamin C is considered the most important water-soluble antioxidant in extracellular fluids. It is capable of neutralizing ROS in the aqueous phase before lipid peroxidation is initiated. Vitamin E, a major lipid-soluble antioxidant, is the most effective chain-breakingantioxidant within the cell membrane where it protects membrane fatty acids from lipid peroxidation. Vitamin C has been cited as being capable of regenerating vitamin E.

Beta carotene and other carotenoids are also believed to provide antioxidant protection to lipid-rich tissues. Research suggests beta carotene may work synergistically with vitamin E.

A diet that is excessively low in fat may negatively affect beta carotene and vitamin E absorption, as well as other fat-soluble nutrients. Fruits and vegetables are major sources of vitamin C and carotenoids, while whole grains and high quality, properly extracted and protected vegetable oils are major sources of vitamin E [1-4].

PHYTONUTRIENTS

A number of other dietary antioxidant substances exist beyond the traditional vitamins discussed above. Many plant-derived substances, collectively termed "phytonutrients," or "phytochemicals," are becoming increasingly known for their antioxidant activity. Phenolic compounds such as flavonoids are ubiquitous within the plant kingdom: approximately 3,000 flavonoid substances have been described in Natural Antioxidants in Human Health and Disease. ed. Frei, B. Academic Press: San Diego, 1994.

In plants, flavonoids serve as protectors against a wide variety of environmental stresses while, in humans, flavonoids appear to function as "biological response modifiers."

Flavonoids have been demonstrated to have anti-inflammatory, antiallergenic, anti-viral, anti-aging, and anti-carcinogenic activity.

The broad therapeutic effects of flavonoids can be largely attributed to their antioxidant properties. In addition to an antioxidant effect, flavonoid compounds may exert protection against heart disease through the inhibition of cyclooxygenase and lipoxygenase activities in platelets and macrophages.

Endogenous Antioxidants

In addition to dietary antioxidants, the body relies on several endogenous defense mechanisms to help protect against free radical-induced cell damage. The antioxidant enzymes – glutathione peroxidase, catalase, and superoxide dismutase (SOD) – metabolize oxidative toxic intermediates and require micronutrient cofactors such as selenium, iron, copper, zinc, and manganese for optimum catalytic activity. It has been suggested that an inadequate dietary intake of these trace minerals may compromise the effectiveness of these antioxidant defense mechanisms. Research indicates that consumption and absorption of these important trace minerals may decrease with aging .Intensive agricultural methods have also resulted in significant depletion of these valuable trace minerals in our soils and the foods grown in them. Glutathione, an important water-soluble antioxidant, is synthesized from the amino acids glycine, glutamate, and cysteine. Glutathione directly quenches ROS such as lipid peroxides, and also plays a major role in xenobiotic metabolism. Exposure of the liver to xenobiotic substances induces oxidative reactions through the upregulation of detoxification enzymes, i.e., cytochrome P-450 mixed-function oxidase. When an individual is exposed to high levels of xenobiotics, more glutathione is utilized for conjugation (a key step in the body's detoxification process) making it less available to serve as an antioxidant. Research suggests that glutathione and vitamin C work interactively to quench free radicals and that they have a sparing effect upon each other. Lipoic acid, yet another important endogenous antioxidant, categorized as a "thiol" or "biothiol," is a sulfur-containing molecule that is known for its involvement in the reaction that catalyzes the oxidative decarboxylation of alpha-keto acids, such as pyruvate and alphaketoglutarate,in the Krebs cycle. Lipoic acid and its reduced form, dihydrolipoic acid (DHLA), are capable of quenching free radicals in both lipid and aqueous domains and as such has been called a "universal antioxidant." Lipoic acid may also exert its antioxidant effect by chelating with pro-oxidant metals. Research further suggests that lipoic acid has a sparing effect on other antioxidants. Animal studies have demonstrated supplemental lipoic acid to protect against the symptoms of vitamin E or vitamin C deficiency [5-8].

Additional physiological antioxidants are listed in Table II.

Table 2. Antioxidant Protection System

Endogenous Antioxidants
• Bilirubin

• Thiols, e.g., glutathione, lipoic acid, N-acetyl cysteine
• NADPH and NADH
• Ubiquinone (coenzyme Q10)
• Uric acid
• Enzymes:
– copper/zinc and manganese-dependent superoxide dismutase (SOD)
– iron-dependent catalase
– selenium-dependent glutathione peroxidase

Dietary Antioxidants
• Vitamin C
• Vitamin E
• Beta carotene and other carotenoids and oxycarotenoids, e.g., lycopene and lutein
• Polyphenols, e.g., flavonoids, flavones, flavonols, and proanthocyanidins

Metal Binding Proteins
• Albumin (copper)
• Ceruloplasmin (copper)
• Metallothionein (copper)
• Ferritin (iron)
• Myoglobin (iron)
• Transferrin (iron)

OXIDATIVE STRESS

As remarkable as our antioxidant defense system is, it may not always be adequate. The term "oxidative stress" has been coined to represent a shift towards the pro-oxidants in the pro-oxidant/antioxidant balance that can occur as a result of an increase in oxidative metabolism. Increased oxidative stress at the cellular level can come about as a consequence of many factors, including exposure to alcohol, medications, trauma, cold, infections, poor diet, toxins, radiation, or strenuous physical activity. Protection against all of these processes is dependent upon the adequacy of various antioxidant substances that are derived either directly or indirectly from the diet. Consequently, an inadequate intake of antioxidant nutrients may compromise antioxidant potential, thus compounding overall oxidative stress.

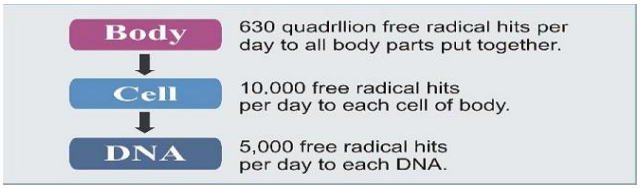


Fig 2. Free Radical Damage to Body, Cell & DNA

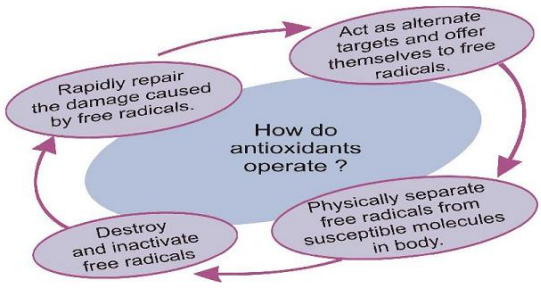
Oxidative Stress and Human Disease

Oxidative damage to DNA, proteins, and other macromolecules has been implicated in the pathogenesis of a wide variety of diseases, most notably heart disease and cancer.

A growing body of animal and epidemiological studies as well as clinical intervention trials suggest that antioxidants may play a pivotal role in preventing or slowing the progression of both heart disease and some forms of cancer.

Table 3. Conditions Associated with Oxidative Damage
• Atherosclerosis
• Cancer
• Pulmonary dysfunction
• Cataracts
• Arthritis and inflammatory diseases
• Diabetes
• Shock, trauma, and ischemia
• Renal disease and hemodialysis
• Multiple sclerosis
• Pancreatitis
• Inflammatory bowel disease and colitis
• Parkinson's disease
• Neonatal lipoprotein oxidation
• Drug reactions
• Skin lesion & Aging

HOW DO ANTIOXIDANTS OPERATE



Composition

Supplement Facts
Serving size : 1 Veg Capsule — Servings per container : 120
Each Hydroxypropyl Methyl Cellulose Capsule Contains
Ingredients: Moringa Oleifera 100mg, Oregano Leaf Extract 25mg, Rosemary Extract 25mg, Pomegranate Extract 25mg, Lemon Peel Extract 5mg, Amla Extract (Standardized Vitamin C 10%) 30mg, Guava Leaf Extract 10mg, Sesbania Extract 5mg, Holy Basil Extract 10mg, Citrus Bioflavonoids 10mg, Piperine Extract 5mg, Ginseng Extract 25mg, Ginkgo Biloba Extract 10mg, Safed Musli Powder 10mg, Silicon Dioxide [551], Dibasic Calcium Phosphate [341(ii)]. Hydroxypropyl Methyl Cellulose Capsules.

Pharmacological Action of each ingredients

MORINGA OLIEFERA

- It helps to modulate anemia, high blood pressure, diabetes and maintains healthy blood cholesterol, thyroid, liver and kidneys.
- Helps to reduce depression, stress and anxiety.
- Helps to support cardiovascular, digestive and respiratory health.
- Helps to increase sperm motility and count.

OREGANO LEAF EXTRACT

Oregano leaf extract has natural antifungal, antibacterial and anti-inflammatory properties. It contains vitamins A, C, E and K as well as fiber, folate, iron, magnesium, vitamin B6, calcium and potassium.

- Helps to impair body's ability to absorb iron by promoting synthesis of red blood cells.
- Helps to stimulate and regulate the cardiovascular health and bowel movement.
- Helps to promote bone metabolism, attributed to its high content of magnesium and calcium.

ROSEMARY EXTRACT

Rosemary is an excellent antioxidant that combats free radical damage. It contains iron, potassium, fiber, copper, calcium, magnesium and B complex vitamins.

- Helps to improve memory, increase intelligence and focus.
- Helps to improve mood and relieves stress in those with chronic anxiety or stress hormone imbalances.
- Helps to increase the production of red blood cells and blood flow.

SAFED MUSLI

- Helps to boost the immune system.
- Helps to restore male reproductive system disorders like impotency, low sperm count and premature ejaculation, etc.
- Helps to increase the level of High-Density Lipoprotein HDL (good cholesterol).

PIPERINE

- Black Pepper is a source of piperine; it works as a catalyst to increase the absorption rate botanical ingredients.
- Help to increase the absorption by slowing intestinal transit rate and thereby increasing the availability of key nutrients.
- Helps to support digestive system and maintain healthy breathing patterns. It may also help to manage joint conditions and stomach ulcers.

POMEGRANATE EXTRACT

Pomegranates have anti-oxidant, anti-viral and anti-tumor properties and are said to be a good source of vitamins, especially vitamin A, vitamin C, and vitamin E as well as folic acid.

- Helps lower bad cholesterol (LDL), increase good cholesterol (HDL), thus preventing heart disease.
- It possesses anti-aging properties thus, reduces inflammation, rejuvenating skin both internally and externally.

GINSENG

- Ginseng helps to improve concentration, memory and physical endurance.
- Helps to reduce depression, anxiety and chronic fatigue.
- It helps to boost metabolism, immune system and fight infections.
- Helps to lower blood sugar levels in people with type 2 diabetes.

GINKGO BILOBA EXTRACT

- Helps the body's ability to handle stress and counteracts the effects of high levels of stress hormones like cortisol and adrenaline.
- Helps to reduce headaches, anxiety, fatigue and muscle pain.
- Helps to improve blood flow to the brain, eyes and fights free radial damage that can harm the cornea, macula and retina.
- Helps to support memory, cognitive health, promote alertness and mental clarity.

Supplement Facts

Presentation: Veg caps

Usage:

Nutritional Benefits of Plant Based Vitamins

- Loaded with phytonutrients, essential oils, Vitamin A, B complex, C and many minerals.
- Helps to decrease cholesterol levels and maintain blood pressure.
- Helps in improving bone health. It contains a high amount of calcium and vitamin C, which help in maintaining and improving the health of bones.
- Helps to relieve stress, strengthen immunity, and facilitate proper digestion.
- Helps to support normal blood glucose levels.
- Helps to increase peristalsis in the bowels thereby increases bowel movement thus, eliminating waste.
- Helps to purify blood vessels as well as remove the impurities found in skin cells which in turn promotes healthy skin.
- Helps to support cardiovascular, digestive and respiratory health.

Contra-indications: Product is contra-indicated in persons with Known hypersensitivity to any component of the product hypersensitivity to any component of the product.

Recommended usage : *Adults:* .1-2 Veg caps twice a day with water or Milk or liquid of choice twice daily [7-11]. "Do not exceed the recommended daily dose"

Administration: Taken by oral route at anytime with food.

Precautions: Do not exceed the recommended daily dose.

Warnings: If you are taking any prescribed medication or has any medical conditions always consults doctor or healthcare practitioner before taking this supplement.

Side Effects: Very Mild side effects like nausea, headache and vomiting in some individuals may be observed.

Storage: Store in a cool, dry and dark place.

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Conflicts of interest statement

The authors declare that there is no conflict of interest.

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