Research Article

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Optigisiongold capsules: a natural antioxidant formulation with goodness of plant based extracts for maintaining optimum health and wellbeing

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ABSTRACT

Damage to cells caused by free radicals is believed to play a central role in the aging process and in disease progression. 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. As 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. based on these facts A Super Antioxidant Multivitamin, Multimineral Formulation **OPTIGISIONGOLD** with goodness of Natural plant based Extract has been Developed by R&D Centre, LACTONOVA NUTRIPHARM PVT LTD, HYDERABAD. The present paper Reviews the Role of in **OPTIGISIONGOLD** maintaining optimum health and wellbeing.

INTRODUCTION

The ability to utilize oxygen has provided humans with the benefit of metabolizing fats, proteins, and carbohydrates for energy; however, it does not come without cost. Oxygen is a highly reactive atom that is capable of becoming part of potentially damaging molecules commonly called “free radicals.” Free radicals are capable of attacking the healthy cells of the body, causing them to lose their structure and function. Cell damage caused by free radicals appears to be a major contributor to aging and to degenerative diseases of aging such as diseases, cardiovascular disease, cataracts, immune system decline, and brain dysfunction [1-5].

Overall, free radicals have been implicated in the pathogenesis of at least 50 diseases. Fortunately, free radical formation is controlled naturally by various beneficial compounds known as antioxidants. It is when the availability of

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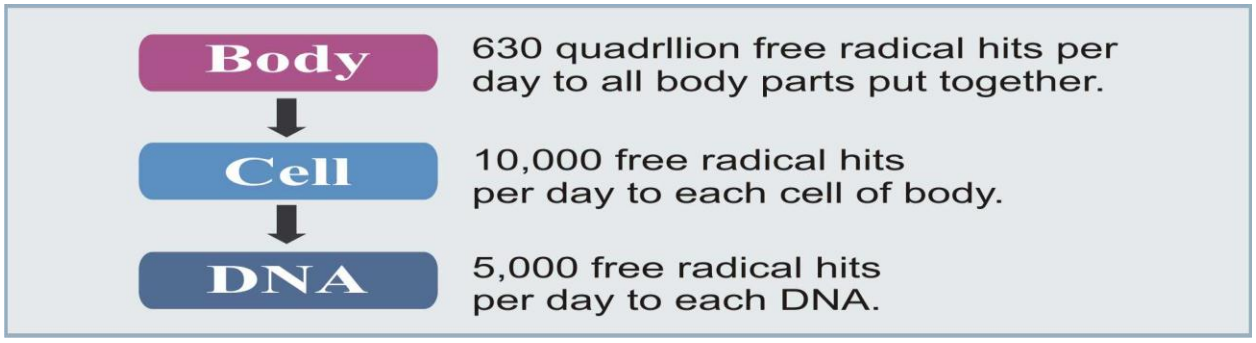
antioxidants is limited that this damage can become cumulative and debilitating. Free radicals are electrically charged molecules, i.e., they have an unpaired electron, which causes them to seek out and capture electrons from other substances in order to neutralize themselves. Although the initial attack causes the free radical to become neutralized, another free radical is formed in the process, causing a chain reaction to occur. And until subsequent free radicals are deactivated, thousands of free radical reactions can occur within seconds of the initial reaction. Antioxidants are capable of stabilizing, or deactivating, free radicals before they attack cells. Antioxidants are absolutely critical for maintaining optimal cellular and systemic health and well-being [6-11].

REACTIVE OXYGEN SPECIES



Reactive oxygen species (ROS) is a term which encompasses all highly reactive, oxygen-containing molecules, including free radicals. Types of ROS include the hydroxyl radical, the superoxide anion radical, hydrogen peroxide, singlet oxygen, nitric oxide radical, hypochlorite radical, and various lipid peroxides. All are capable of reacting with membrane lipids, nucleic acids, proteins and enzymes, and other small molecules, resulting in cellular damage. ROS are generated by a number of pathways. Most of the oxidants produced by cells occur as:

- A consequence of normal aerobic metabolism: approximately 90% of the oxygen utilized by the cell is consumed by the mitochondrial electron transport system.
- Oxidative burst from phagocytes (white blood cells) as part of the mechanism by which bacteria and viruses are killed, and by which foreign proteins (antigens) are denatured.
- Xenobiotic metabolism, i.e., detoxification of toxic substances. Consequently, things like vigorous exercise, which accelerates cellular metabolism; chronic inflammation, infections, and other illnesses; exposure to allergens and the presence of "leaky gut" syndrome; and exposure to drugs or toxins such as cigarette smoke, pollution, pesticides, and insecticides may all contribute to an increase in the body's oxidant load.

ANTIOXIDANT PROTECTION

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

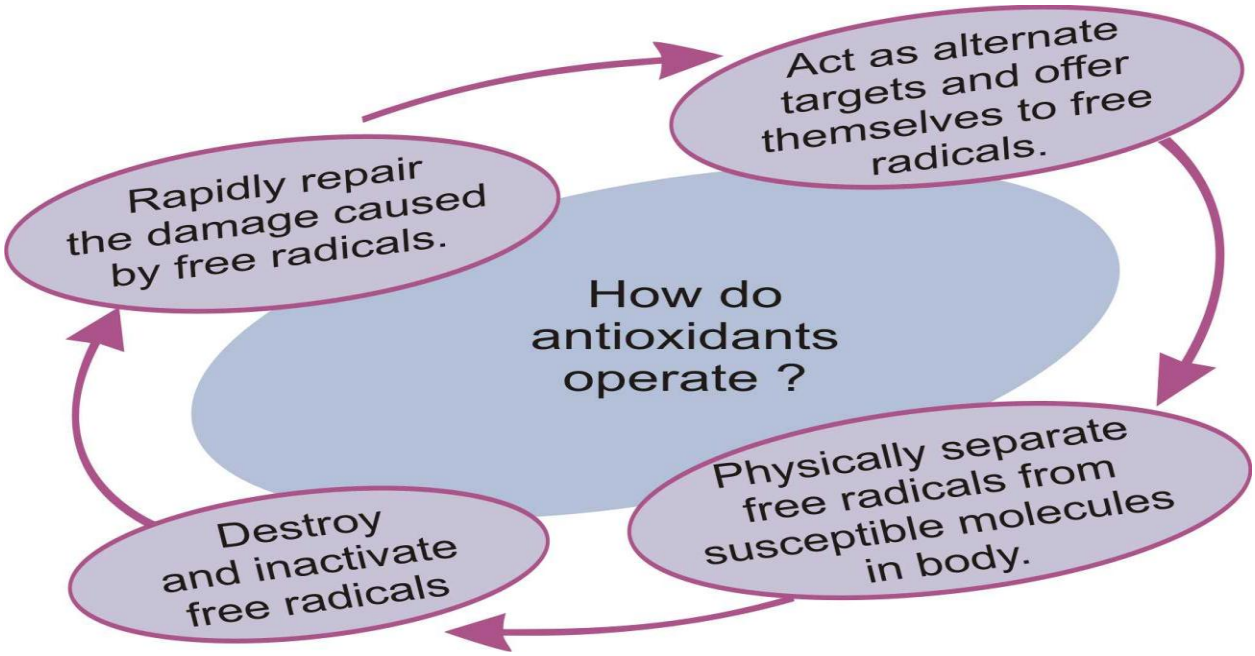


Table I: various ROS and corresponding neutralizing antioxidants

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.

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 up regulation 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 Additional physiological antioxidants are listed in Table II.

Table II: 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.

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 diseases.

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 diseases.

Table III: Conditions associated with oxidative damage

- Atherosclerosis
- Diseases
- 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

Role of OPTIGISION GOLD in Preventing Oxidative Damage caused by free radicals

OPTIGISIONGOLD capsules, A Super Antioxidant Multivitamin, Multimineral Formulation **OPTIGISION GOLD** with goodness of Natural plant based Extract has been developed by R&D Centre, LACTONOVA NUTRIPHARM PVT LTD, HYDERABAD.

Composition of OPTIGISIONGOLD capsules

Supplement Facts

Serving size : 1 Veg Capsule — Servings per container : 120

With Potent Standardized Plant Based Extracts

Ingredients : SIGRU [Moringa oleifera Lam] (Lf.) 80mg, NIMBU [Citrus limon (Linn) Burm .f] (Fr&Peel) 5mg, AMALAKI DRY [Emblica officinalis Gaertn.] (Drd.Frt.) 50mg, PERUKA [Psidium guava] Fr/Lf 10mg, TULASI [Ocimum sanctum Linn] (Sd.) 10mg, NARANGA [Citrus Aurantium] Fruit & peel 10mg, PIPPALI [Piper Longum Linn] (Ft.) 5mg, ASHWAGANDHA [Withania somnifera Dunal] (Rt.) 35mg, SAFED MUSLI [Asparagus Adsendens] Root 10mg, Shilajit Extract 50mg, Satapatrika (Rosa Centifolia) 20mg, Agastya Extract (Sesbania) 10mg & Jaitun (Olea europaea) 20mg, Erand kavkati (Carica Papaya) 10mg, Adrak (Zingiber officinale) 10mg, Rajapiluh (Coffea arabica) 25mg, Berberis aristata 25mg.

Pharmacological Action of Each Ingredient

UNIQUE B-COMPLEX VITAMINS FROM FRUITS & VEGETABLES

With all new unique natural proprietary nutrients blend containing standardized Vitamin B1, Vitamin B2, Vitamin B3, Vitamin B5, Vitamin B6 & Vitamin B9 with Co-factors and Co-nutrients for better absorption and bioavailability.

PLANT-BASED VITAMINS

- Extracted from fruits, vegetables, herbs and other natural sources.
- Chemical structure and chemical diversity of vitamins and phytonutrients are naturally retained.
- Contains broad spectrum of closely related vitamins, phytonutrients, co-factors and co-nutrients.
- Shows effective support against diseases.
- Bioavailability is purely high.
- Highly absorbed and have very less side effects.

MORINGA OLIEFERA (SIGRU)

- 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.

NIMBU (CITRUS LEMON)

- Exhibits anti fungal and antibacterial activities.
- lemon peels extracts are rich in vitamins, including folic acid, folates and phytonutrients.
- Helps to neutralize normal peristalsis, helps to relief heartburn and gastroesophageal reflux.
- D-Limonene, in citrus bioflavonoids has well established chemo - preventive activity and anti tumor activities against many types of cancer.

AMALAKI DRY

- Helps to regulate glucose metabolism and cardiac health.
- Helps to lower glucose in both healthy persons and diabetics.
- Helps to reduce inflammation in arthritis and osteoporosis.
- Helps to boost immune system.
- Helps to strengthen the lungs, regulates elimination of free radicals and enhance fertility.

PERUKA (PSIDIUM GUAVA)

- Guavas are rich in nutrients including vitamins, carotenoids, polyphenols and antioxidant pigments.
- Helps to maintain growth of immune system .
- Helps to maintain cell growth and division.
- Helps in breakdown of carbohydrates.

OPTIGISION GOLD®

TULASI (HOLY BASIL EXTRACT)

- Helps to lower cholesterol and blood sugar.
- Possess strong antioxidant, immune support properties.
- Helps to treat yeast infection, fever and thrust.
- Helps to relax the mind(stress).
- Helps in preventing gastric ulcers and boosts immunity.
- Helps in cancer therapy
- Helps to fight with air borne pathogens due to environmental charges.

NAGANGA (CITRUS AURANTIUM)

- Helps to improve appetite.
- Helps for gastrointestinal disorders.
- Helps in regulating fat levels in blood and blood purification.
- Helps in lowering of blood sugar in people with diabetics.
- Helps in stimulating heart rate and circulation.

PIPPALI (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.

ASHWAGANDHA (WITHANIASOMNIFERA)

- Helps in neuroprotection & enhanced virility.
- Helps to ease of pain of Chemotherapy.
- Helps to prevent anxiety.
- Helps to improve formation of memories.
- Helps to decrease cortisol level.

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).

SHILAJIT EXTRCT

- Helps to increase sperm quality.
- Helps to promote the regeneration of pancreatic cells.
- Helps to maintain healthy level of glucose in body.
- Helps in eliminating mental stress, depression and mental fatigue.
- Helps in indigestion, constipation and other stomach problem that causes pain.
- Helps in sexual health and acts as rejuvenator to increase stamina, vigor and vitality.

SATAPATRIKA

- Helps to treat rheumatic diseases like osteoarthritis and rheumatoid arthritis and helps in improving heart health.
- Helps to improve joint health by reducing stiffness & pain.
- Helps to decrease cholesterol.
- Helps to support diarrhea and healing wounds.

OPTIGISION GOLD®

AGASTYA EXTRACT-SESBANIA EXTRACT

- Helps to cure colic disorder, jaundice, poisoning condition, small-pox, eruptive fever, epilepsy and helps in detoxify the body.
- Possess anxiolytic ,anticonvulsive and hepatoprotective properties.
- Helps to manage abdominal tumors and aids in weight loss.
- Helps in worm infestation and bleeding disorders like menorrhagia.

ADRAK - GINGEROLS

- Helps in treating arthritis , rheumatism , indigestion, constipation and ulcer, atherosclerosis, hypertension, vomiting, diabetes mellitus and cancer.
- Helps in controlling the process of aging.
- Helps to relieve from stomach upset, motion sickness, nausea and vomiting.

JAITUN

- Olive Leaf Extract has an antioxidant, antihypertensive, anti-atherogenic activity, anti-inflammatory hypoglycemic properties and reduce cardiovascular diseases.
- Helps to support immune system, blood sugar level, cholesterol & reduce arthritic pain & swelling.

RAJAPILUH- CHLOROGENIC ACID

- Helps to reduce the absorption of carbohydrates.
- Helps to lower blood pressure and lowers sugar level in Type 2 Diabetes
- Helps to boost metabolism.

ERAND KAVKATI - CARICA PAPAYA

- Provides beneficial effect on platelet count.
- Helps in reducing oxidative stress by papaya`s lycopene content.
- Antioxidant property helps in improving heart health.

BERBERIS ARISTATA

- Berberine is supplemented for its anti-inflammatory and anti-diabetic effects.
- Helps to improve intestinal health and lowers cholesterol level.
- Helps to reduce glucose production in liver.

for Further Info

PUGOS PRODUCTS PRIVATE LIMITED

No.42, 2nd Floor, "Leelavathi Mansion",6th Cross, Margosa main road, Malleshwaram, Bangalore, **INDIA**-560 003.
Customer care no : 080-41716151 / 41740000

Supplement Facts

Presentation: 60 veg capsules
Usage: As a food supplement combination of antioxidants to improve health and vitality.

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:* two capsules per day along with food.
"Do not exceed the recommended daily dose"
Administration: Taken by oral route at anytime with food.

Precautions

Food Supplements must not be used as a substitute for a varied and balanced diet and a healthy lifestyle. This Product is not intended to diagnose, treat, cure or prevent any diseases. Do not exceed the recommended daily dose.

Warnings

If you are taking any prescribed medication or has any medical conditions or have any medical conditions (seizures) under age group 17 year always consults doctor or healthcare practitioner before taking supplements.

Side Effects

Mild side effects like nausea, headache and vomiting in some individuals have been reported.
Storage: Store in a cool, dry and dark place.
Keep out of reach of children.

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