PhytoZon

Ingredient Benefits:

RNI249® – Is a Patented, Highly Concentrated Substance:

(Support studies under “Scientific Studies”)

RNI249® Is the only known natural substance or pharmaceutical shown to increase endogenous IGF-1 in human cells

Research supported by two National Institutes of Health: National Institute of Aging and the National Institute of Arthritis and Musculoskeletal Disease

Helps Support:

1. Endogenous IGF-1 Secretion
2. Healthy Aging

RNI 249® is a patented extract from the hypocotyls of the crucifer Lepidium meyenii (aka “Maca”), a radish-like tuber cultivated only on the inner slopes of the Andean Mountains. In a study with Case Western Reserve University, it has been shown to increase human cellular production of IGF-1 and in a clinical trial, together with Vincaria®, was an effective treatment for osteoporosis.

The pituitary gland in the brain secretes human growth hormone (HGH) which in turn signals (primarily) the liver to produce and secrete insulin like growth factor 1 (IGF-1). Both HGH and IGF-1 promote whole body growth and their levels peak during puberty. IGF-1 increases protein synthesis (muscle growth), bone mineralization, low blood sugar, kidney function and insulin sensitivity. It promotes healing and repair of bone, muscle, nervous system and immune system cells.

Following puberty when its levels are at their peak, as we age, IGF-1 levels precipitously decline such that by the time we are 60 years old, the levels have decreased by approximately eighty percent (80%).

This natural decline in IGF-1 levels in adulthood, known as somatopause, is responsible for most of the signs we associate with aging. These include but are not limited to altered musculoskeletal function (e.g. muscle atrophy; associated decrease in strength; bone calcium loss/osteoporosis); altered endocrine function (i.e. a higher incidence of diabetes); altered carbohydrate and lipid metabolism; altered Integumentary function (e.g. skin thinning, wrinkles); and, altered neurological function (e.g. dementia, Alzheimer disease).

To date, RNI 249 is the only substance, natural or pharmaceutical, which has been shown to increase the body's natural production of IGF.

As proof of principle, researchers subsequently conducted a human clinical trial, sponsored in part by the NIH/NIA, in subjects with confirmed osteoarthritis. Within the 30-day period of the trial and then for most within seven days, 94% of the participants had a statistically significant improvement in mobility and flexibility and in comparison to the positive control glucosamine, a marked reduction in pain.

Vincaria® – Is a Patented, Highly Concentrated Substance:

(Support studies listed in the Scientific Studies)

Clinically effective: Has been found in a preliminary study to reduce pain associated with activity in individuals with osteoarthritis of the knee.

Vincaria® is a patented alkaloid-deplete extract from the Uncaria species vine shown in human clinical studies to reduce inflammation and pain associated with osteoarthritis. It's mechanism of action is regulation of the TNF-alpha, a cytokine responsible in over 35 inflammatory pathways, via the NFkB. It also protects the gastrointestinal tract from NSAID (e.g. aspirin) induced injury, such as ulcers.

Inflammation is a key element and chronically active in many diseased states, including inflammatory bowel disease, arthritis, sepsis, gastritis, asthma, and atherosclerosis. Nuclear Factor Kappa B (NFkB) is a protein complex found in most cells that acts as the “on-off” switch for many genes involved in various types of inflammation.

Beginning in 1998, scientists at LSU Medical School and later Albany Medical College began studying the two cat’s claw species. It was discovered that UG acts as a powerful anti-inflammatory agent by regulating TNF alpha, the master “On-Off” switch in our bodies responsible for over thirty-five different types of inflammation – from arthritis to asthma. When alkaloid traces were extracted and removed from UG, a patented process which created Vincaria®, it was even more therapeutic.

Subsequently, a clinical trial was conducted in which a single once-a-day 100 milligram dose of Vincaria® was effective in ninety percent of patients, the majority in less than five days. It was then used as an anti-inflammatory component, both to promote healthy skeletal, muscular and gastric health in obesity. In a separate trial, it was combined with a natural mineral supplement again successful for arthritis and later, with RNI 249, a maca extract, for osteoarthritis of the knee.

Zangrado® & Prograd o® – Patented, Highly Concentrated Substances:

(Support studies listed in the Scientific Studies section)

Prograd o® and Zangrado® are patented extracts derived from the viscous red latex of the Croton species tree found primarily in the South American rainforests and is sustainably wild-crafted. RNI original research demonstrated their mechanism of action as regulating the sensory afferent neurons that line the internal organs as well as the skin

Both extracts affect over-stimulated sensory neurons and signal the central nervous system to respond. Orally, both Prograd o and Zangrado have been effective in the treatment of nausea and ulcers with implications for irritable bowel syndrome and gastroesophageal reflux disease as well as other gastrointestinal complaints. Topically, Zangrado has been shown clinically effective in reducing pain and itching associated

with insect bites and stings, contact dermatitis, and plays a cicatrizing role in the healing process.

Sensory (afferent) neurons are nerves that respond to sensation – such as pain and itch – and are located throughout the body – lining the skin, organs and lungs. In a sense, coughing is your body's way of "itching" its lungs.

Additionally, in human cells, Progrado has been shown to regulate overactive matrix metalloproteinases, molecular "scissors" from breaking down cartilage while increasing cellular IGF-1 levels.

Zangrado® has been used in clinical trials topically to treat the pain and itch associated with bug bites and bee stings. It has been used internally to reduce nausea (emesis), diarrhea and also itch. Coughing is a method the lungs use to "itch" themselves so intuitively, Zangrado® would be effective internally for certain respiratory conditions. Prograd® has been shown to affect matrix metalloproteinase (MMPs). These are the molecular "scissors" that break down cartilage which is normally replaced by new cell Prograd® thus allowing the body to repair itself.

Importantly, as with red wine, the proanthocyanidins found in Prograd® may offer benefits to the cardiovascular system.

LUTEIN® May increase Macular Pigment Density and Vision

(Support studies listed in the Scientific Studies)

Lutein® (Latin luteus, "yellow") is a carotenoid, a naturally occurring pigment found in the photosynthetic energy cells (chloroplasts) of plants and, in the animals that eat these plants. Its name is derived from the vegetable "carrot" to which it gives its typical orange color. Even the pink color of flamingos and salmon as well as the red in lobsters is due to carotenoids. Lutein® is found dominant in some yellow flowers (i.e. dandelions) and carrots, leafy green vegetables (i.e. spinach, turnips, collard greens) and is partially responsible for the coloring seen in egg yolks. The lighter the yolk color, the less Lutein® it contains. We often do not recognize Lutein® because it is masked by

the “green” in plants but with the changing of the seasons, the yellow that are seen in autumn leaves is in fact Lutein®.

Lutein® is yellow because it absorbs blue light as well as solar radiation, protecting the plant’s photosensitive mechanisms. This is extremely important for humans (as well as other animals) because it is found concentrated in the macula and retina, the layer of cells that lines the inner eye. It therefore protects the eye much as it protects the plant from harmful light and radiation. It also acts as an antioxidant, a scavenger or “garbage man” for loose reactive oxygen molecules that act in the same manner as oxidation which causes metals to rust.

There has been a plethora of peer-reviewed and published human clinical studies over the past decade, and beyond, which clearly show that Lutein® is of significant benefit to the eyes. It helps prevent age-related macular degeneration (AMD) as well as increase visual acuity and function (myopia, presbyopia), contrast sensitivity and night vision. It has been associated with a reduced risk for glaucoma and cataracts and even retinopathy – retinal damage seen in premature babies

Lycopene – Found in tomatoes, fruits and vegetables,

such as cherries, watermelon, pink grapefruit, red bell peppers and papayas. There are many fruits and vegetables such as asparagus and parsley that also contain lycopene. (Support studies listed in the Scientific Studies)

Helps Support:

Heart Health
Prostate Health
Circulatory System Health
Enhanced Antioxidant Activity

The name “Lycopene” is derived from the Latin Solanum lycopersicum, the Linnaean name for the common Tomato. It is the bright red pigment found in tomatoes and other fruits and vegetables, such as cherries, watermelon, pink grapefruit,

red bell peppers and papayas. However, there are many fruits and vegetables such as asparagus and parsley that contain lycopene yet are not red in color.

Lycopene is not water soluble so upon ingestion, it is incorporated in fat globules in the intestines and then disseminated. As it permeates the very low-density lipoproteins in the blood, those made up of triglycerides and the “bad” cholesterol, this may in some way explain its benefits in preventing/ameliorating atherosclerosis. Similarly, lycopene supplementation is associated with enhancing high density lipoprotein levels (the “good” cholesterol) and reducing blood pressure so in general, acts effectively on the cardiovascular system.

As it is hydrophobic, Lycopene primarily ends up residing in fatty tissues and organs, such as the prostate. Thus, it is logical and has been shown in studies to reduce prostate symptoms, PSA levels and perhaps, the risk of prostate cancer itself. Additionally, its concentration in the fatty tissues, such as the testes, could explain its effects on male fertility and spermatogenesis.

There are several studies that have shown it is effective in some types of inflammation; that it may reduce the risk and severity osteoporosis in postmenopausal women; and even, could play a role in reduce the risk of macular degeneration. There are some studies indicating that Lycopene can reduce the risk associated with UV damage from Sun overexposure which is consistent with the role it plays in skin pigmentation.

Lycopene is probably best known from larger studies reporting the benefits of normal tomato consumption – such as the reduction of cardiovascular incidents and increased quality and span of life as seen in the Mediterranean diet. While it is true that a higher level of serum Lycopene is associated with a healthy lifestyle, it is interesting to note that one study reported that in a subgroup with high lycopene levels, the reverse was found: poor health parameters.

Further review revealed that in this subgroup, the main source of Lycopene was in fact from ketchup. This group relied heavily on fast food restaurants for sustenance so while their levels were higher, their general lifestyle negated any perceived benefits.

Astragalus – (Astragalus membranaceus) root, also known as Milkvetch, has been used as a traditional Chinese medicine (TCM) for over 2,000

years. While it has been traditionally used to protect the liver, for aging, stress and the heart, data reveals that it may be effective in enhancing the immune system.

(Support studies listed in the Scientific Studies)

Helps Support:

1. Immune System
2. Healthy Immune Cell Function
3. May help reduce seasonal allergies

Vincamine: Coming Soon

Piperine – Is a purified extract from the fruit of Black and Long Peppers (Piper nigrum and Piper longum), a generally recognized as safe (GRAS) lipophilic ('fat soluble") alkaloid that is responsible for pepper's pungency ("spiciness").

(Studies listed in the Scientific Studies)

Helps Support:

Increased Nutrient Absorption

It is a part of Ayurveda, the traditional medicine of India, dating back well over two thousand years ago, and one of its most widely used herbs in two-thirds of all Ayurvedic prescriptions. Together with the pungent alkaloids found in other spices like garlic, ginger, licorice and turmeric, it increases the bioavailability of coadministered substances such as vitamins, minerals, dietary supplements and pharmaceutics.

Piperine acts as "bioenhancer" of various substances. Current published studies have shown that it significantly increases the absorption and bioavailability of vitamins (B1, B2, B3, B6, B9, B12, C), minerals (iodine, calcium, iron, zinc, copper, selenium,

magnesium, potassium, manganese), amino acids (lysine, isoleucine, leucine, threonine, valine, tryptophan, phenylalanine, methionine), herbal compounds (curcumin, ginsenosides, quercetin, coenzyme Q10, resveratrol, epigallocatechin gallate from green tea, pycnogenol), and drugs (such as ibuprofen, diclofenac, rifampicin, ampicillin, tetracycline, pyrazinamide, fexofenadine). For example, it has been shown to increase curcumin levels by 2000%.

Drugs, supplements and nutrients taken by mouth (as opposed to intravenous, sublingual, intranasal, transdermal, buccal) are affected by "first pass metabolism." Essentially, they are degraded by digestion in the stomach and intestines by acids and enzymes; significantly altered in the liver; and excreted. This affects their bioavailability – the amount of the substance that actually ends up in circulation – in the blood.

For example, cannabidiol (CBD) is 34-46% bioavailable intranasally; 40% when vaporized; but, approximately 6-9% when taken orally: so, for every 100mg ingested, only 9mg is available for use. Orally, aspirin is 68%, Zolpidem (i.e. Ambien®) 67%, diphenhydramine (e.g. Benadryl®) 40-60%, ACE inhibitors (e.g. Benazepril/Lotensin®) 37% and statins (i.e. Simvastatin/Zocor®) only 5% capable of being used by the body.

The bioavailability of a substance is based on four different processes: (1) conversion: enzymes in the gut breakdown the substance into something much less active; (2) absorption: shuttling the substance to the intestines where they can be transferred to the blood thru the intestinal lining; (3) exclusion: removing substances from the cells that cannot be used; and, (4) solubility: adding to the substance to make it unable to enter the cells. Piperine has the ability to affect all of these processes.

Piperine inhibits the enzymes in the gut and intestines that breakdown/metabolize and convert drugs and nutritive substances. It stimulates the activity of amino-acid transporters in the intestinal lining. It inhibits p-glycoprotein, the 'pump' protein that removes substances from cells and it decreases the intestinal production of glucuronic acid, thereby permitting more of the substances to enter the body in active form. Consequently, some of these substances are able to reach, enter, and remain within their target cells for longer periods of time than would otherwise be the case. Therefore, Piperine can sometimes turn a marginally effective therapeutic substance into a highly effective one simply by increasing its bioavailability and intracellular residency.