

# — Ocular Support —

Concentrated and highly bioavailable vitamin, mineral, and herbal formulas for enhancing ocular health\*

*Environmental stressors, including sunlight and computer-related eye strain, as well as aging are among the numerous factors that impact eye health. Research has revealed various nutritional strategies for maintaining healthy ocular function. Pure Encapsulations offers a number of vitamins, minerals, herbs and highly specialized nutrients to provide potential support for the intricate features of the eye, including the optic nerve, lens, cornea, retina, macula, and fovea.\**

## Lutein

*Antioxidant and light filtering protection for healthy visual function\**

\*Lutein is a carotenoid found in a vast number of fruits and vegetables. Like other carotenoids, lutein has antioxidant activity in various tissues. However, it is only one of two carotenoids that is stored within the retina where it promotes the integrity and density of the macular pigment. Multiple clinical studies suggest a direct relationship between lutein supplementation and macula lutein concentration. Lutein uptake reportedly occurs in the receptor layer of the eye through a soluble carotenoid-binding protein called tubulin. Clinical trials have indicated that lutein specifically supports eye health and visual clarity through a combination of pigment associated antioxidant protection and light screening mechanisms. Furthermore, a two-year, double blind, placebo-controlled pilot study reported that lutein may support healthy visual function in older individuals more efficiently than alpha tocopherol.

*Pure Encapsulations free-form lutein is structurally identical to the lutein found naturally in spinach and other leafy greens, providing optimal support for macular health and overall antioxidant support for the retina.\**

Lutein is sourced from FloraGLO™ brand. FloraGLO™ is a registered trademark of Kemin Industries, Inc.

REFERENCE: Richer S, et al. Double-masked, placebo-controlled, randomized trial of lutein and antioxidant supplementation in the intervention of atrophic age-related macular degeneration: the Veterans LAST study (Lutein Antioxidant Supplementation Trial). *Optometry*. 2004 Apr;75(4):216-30.

### each softgel capsule contains

lutein .....20 mg.  
(from 100 mg. marigold flower extract)  
vitamin E (mixed tocopherols).....1 i.u.  
other ingredients: safflower oil, gelatin, glycerin, water, beeswax

1-2 capsules per day, with meals.

	quantity	order code
<b>Lutein 20 mg.</b>	120	LU1
	60	LU6



Manufacturers of  
Hypo-allergenic  
Nutritional  
Supplements

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

## OculoNutrients

Ocular multivitamin/mineral formula with lutein and zeaxanthin\*

\*Lutein and zeaxanthin are distinct from the rest of the carotenoid family, being the only two absorbed and utilized by the eyes. Referred to as oxycarotenoids or xanthophylls, these fat-soluble compounds contain hydroxyl groups in their ring structures, making them more efficient at quenching free radicals than their carotene counterparts. Studies have shown that zeaxanthin is more concentrated in the center of the macula, or the fovea, whereas lutein is more concentrated along the periphery of the macula and throughout the retina. Furthermore, multiple clinical studies suggest a direct relationship between lutein and zeaxanthin supplementation and macular concentration of these xanthophylls. Lutein and zeaxanthin have been reported in numerous studies, including a double blind, placebo-controlled clinical trial held at the Department of Veterans' Affairs, Medical Center Eye Clinic in Chicago, to promote healthy macular pigment, lens optical density, and visual acuity. Additionally, clinical trials have indicated that lutein and zeaxanthin support vision health through a combination of pigment associated antioxidant protection and blue-light screening mechanisms. One study conducted at Schepens Eye Research Institute and Department of Ophthalmology at Harvard Medical School indicated that zeaxanthin promoted photoreceptor health as well as provided protection from light.

*OculoNutrients is a broad spectrum ophthalmoprotective formula combining 10 mg lutein and 2 mg zeaxanthin per serving (in the optimal 5:1 ratio) with a highly bioavailable vitamin and mineral core, which includes copper, beta carotene, vitamin E, and zinc for healthy eyes.\**

REFERENCE: Hammond BR Jr, Wooten BR, Snodderly DM. Density of the human crystalline lens is related to the macular pigment carotenoids, lutein and zeaxanthin. *Optom Vis Sci* 1997 Jul;74(7):499-504.

### six vegetable capsules contain

ascorbic acid.....	1,000 mg.
vitamin C (as ascorbyl palmitate).....	120 mg.
mixed carotenoids .....	15,000 i.u.
providing:	
beta carotene .....	8,568 mcg.
alpha carotene.....	270 mcg.
cryptoxanthin .....	66 mcg.
lutein.....	42 mcg.
zeaxanthin .....	54 mcg.
zeaxanthin.....	2 mg.
lutein (from 200 mg marigold flower extract) .....	10 mg.
vitamin D <sub>3</sub> .....	400 i.u.
d-alpha tocopherol succinate (vitamin E).....	400 i.u.
thiamine HCl (B <sub>1</sub> ) .....	100 mg.
riboflavin (B <sub>2</sub> ).....	50 mg.
riboflavin 5' phosphate (activated B <sub>2</sub> ).....	25 mg.
pyridoxine HCl (B <sub>6</sub> ) .....	25 mg.
pyridoxal 5' phosphate (activated B <sub>6</sub> ) .....	25 mg.
niacinamide .....	100 mg.
inositol hexaniacinate (no-flush niacin) .....	90 mg.
folic acid.....	800 mcg.**
biotin .....	800 mcg.
pantothenic acid (calcium pantothenate) (B <sub>5</sub> ) .....	400 mg.
methylcobalamin (B <sub>12</sub> ) .....	1,000 mcg.
calcium (citrate) .....	300 mg.
magnesium (citrate) .....	200 mg.
potassium (aspartate) .....	99 mg.
zinc (picolinate) .....	25 mg.
manganese (aspartate) .....	10 mg.
boron (glycinate).....	2 mg.
copper (glycinate) .....	2 mg.
iodine (potassium iodide).....	200 mcg.
chromium (polynicotinate).....	200 mcg.
selenium (selenomethionine).....	200 mcg.
vanadium (aspartate).....	200 mcg.
molybdenum (aspartate).....	100 mcg.

\*\*Provides the recommended dose for pregnant or lactating women.

4-6 capsules per day, in divided doses, with meals.

	quantity	order code
OculoNutrients	360	MVO3
	180	MVO1

## Macular Support Formula™

Antioxidant formula with lutein for healthy eyes\*

\*Macular Support Formula™ is a combination of powerful antioxidants and botanicals designed to protect and support the macula, the central area of the retina responsible for sharp vision. Since the macula is extremely susceptible to free radicals, current research emphasizes the importance of antioxidant supplementation in maintaining macular health. N-acetyl-l-cysteine is a powerful antioxidant and glutathione precursor. In animal studies, it has been shown to protect against oxidative damage to the lens and to support healthy glutathione levels. Glutathione is one of the natural antioxidants found in retinal tissues. Bilberry, containing anthocyanidins, has been shown to moderate visual fatigue and to improve light to dark adjustments. Grape seed extract is another powerful antioxidant and helps support antioxidant balance in the retina. This formula is also enhanced with lutein, one of only two carotenoids found in macular pigment. Lutein promotes the integrity and density of the macular pigment. The antioxidant activity of lutein also provides optimal protection of the macula from light. In addition, lutein helps to maintain the health of the optical lens. Zeaxanthin promotes healthy macular pigment and the mixed carotenoids provide antioxidant support. Vitamin C has also been shown to support ocular health.

*This comprehensive formula brings together proanthocyanidins, amino acids, vitamin C and carotenoids to offer protection against free radicals in retinal tissues.\**

REFERENCE: Obrosova IG, et al. Antioxidants attenuate early up regulation of retinal vascular endothelial growth factor in streptozotocin-diabetic rats. *Diabetologia*. 2001 Sep;44(9):1102-10.

### two vegetable capsules contain

n-acetyl-l-cysteine (free-form).....	250 mg.
reduced glutathione (free-form).....	50 mg.
bilberry ( <i>Vaccinium myrtillus</i> ) extract .....	80 mg.
(standardized to contain 25% anthocyanosides)	
grape ( <i>Vitis vinifera</i> ) seed extract .....	50 mg.
(standardized to contain 92% oligomeric proanthocyanidins)	
lutein (FloraGLO™) .....	6 mg.
(from 120 mg. of marigold flower extract)	
mixed carotenoids (Betatene®).....	25,000 i.u.
providing:	
beta carotene .....	14,280 mcg.
alpha carotene.....	450 mcg.
zeaxanthin .....	90 mcg.
cryptoxanthin .....	110 mcg.
lutein.....	70 mcg.
vitamin C (as ascorbic acid).....	800 mg.
vitamin C (as ascorbyl palmitate) .....	100 mg.

2-4 capsules per day, in divided doses, with meals.

	quantity	order code
Macular Support Formula™	120	MS1
	60	MS6

## AnthoMax

*Unique bilberry extract combination for enhanced retinal protection\**


\*AnthoMax contains Catocyanic Complex®, a highly active fermented fraction of bilberry (*Vaccinium myrtillus*) fruit. A novel fermentation process concentrates the bioactive constituents including cyanidin, delphinidine, petunidine, peonidine and malvidine and preserves their nutritional properties. This allows for enhanced stability, bioavailability and vascular support. Only recently made available in the U.S., Catocyanic Complex has been utilized in France and Germany to support light adjustment and healthy night vision. In fact, it is the original extract used in the Royal Air Force pilot study. Studies indicate the potential for this complex to maintain retina blood vessel integrity, microcirculation, and overall retina health. AnthoMax also contains

Antho 50<sup>®</sup>, a purified, enhanced potency bilberry extract concentrated to deliver 50% anthocyanosides. Additional antioxidant compounds in this extract, such as quercetin, quercetin 3 glucuronide, myricetin and chlorogenic acid, have also been indicated in studies to support visual acuity and retina protection.

*AnthoMax is a highly bioavailable combination of a unique fermented bilberry extract standardized to contain 18% aglycon anthocyanidins (anthocyanins) and a concentrated 50% anthocyanoside bilberry extract, providing enhanced antioxidant protection for eye health.\**

Catocyanic Complex<sup>®</sup> and Antho 50<sup>®</sup> are registered trademarks of Mediolanum Pharmaceuticals Limited.

Reference: Scharer A, Ober M. Anthocyanosides in the treatment of retinopathies. *Klin Monatsbl Augenheilkd.* 1981 May;178(5):386-9.

each vegetable capsule contains 		
bilberry (Vaccinium myrtillus) extract (fruit) .....100 mg. (standardized to contain 18% anthocyanins)		
bilberry (Vaccinium myrtillus) extract (fruit) .....50 mg. (standardized to contain 50% anthocyanosides)		
vitamin C (as ascorbyl palmitate) .....2 mg. (hypo-allergenic plant fiber added to complete capsule volume requirement)		
<b>1-3 capsules per day, in divided doses, between meals.</b>		
	<b>quantity</b>	<b>order code</b>
<b>AnthoMax</b>	<b>120</b>	<b>AN1</b>
	<b>60</b>	<b>AN6</b>


## BenfoMax

*Retina and nerve health support\**

\*Benfotiamine, S-benzoylthiamine-O-monophosphate, is a fat-soluble vitamin B<sub>1</sub> (thiamine) derivative that exhibits enhanced bioavailability and bioactivity. It is found naturally in small amounts in vegetables from the *Allium* genus, including garlic, onions, and leeks. Benfotiamine provides enhanced support for healthy thiamine levels in the body, which in turn promotes optimal production of the enzyme thiamine pyrophosphate, or TPP. This is key to the significance of benfotiamine, since TPP plays a role in maintaining healthy advanced glycation end product, or AGE, activity. This is believed to be particularly supportive for maintaining healthy retinal and nerve function in some individuals. One scientist from Albert Einstein Medical College in the U.S. recently collaborated with researchers from Germany, Italy, China and Japan to demonstrate that benfotiamine influences three metabolic pathways, providing protective support for vascular tissues. In their follow up experiment, they demonstrated the potential for benfotiamine to support the health of the retina. Benfotiamine has been used for over 12 years in Europe.

*Pure Encapsulations offers pure, Japanese manufactured benfotiamine, providing powerful support for vascular protection, peripheral nerve health, and retinal function, in part by maintaining healthy advanced glycation end product, or AGE, activity.\**

REFERENCE: Hammes HP, et al. Benfotiamine blocks three major pathways of hyperglycemic damage and prevents experimental diabetic retinopathy. *Nat Med.* 2003 Mar;9(3):294-9. Epub 2003 Feb 18.

each vegetable capsule contains 		
benfotiamine (S-benzoylthiamine-O-monophosphate).....200 mg.		
vitamin C (as ascorbyl palmitate) .....10 mg. (hypo-allergenic plant fiber added to complete capsule volume requirement)		
<b>1-3 capsules per day, in divided doses, with meals.</b>		
	<b>quantity</b>	<b>order code</b>
<b>BenfoMax</b>	<b>270</b>	<b>BM2</b>
	<b>90</b>	<b>BM9</b>


## Alpha Lipoic Acid 200 mg.

*Water and lipid soluble antioxidant; supports nerve health and retina protection\**

\*Alpha lipoic acid is an exceptionally versatile nutrient; being both water and fat soluble, it is able to function in almost any part of the body. A powerful antioxidant, alpha lipoic acid neutralizes harmful free radicals and enhances the activity of vitamins C and E, promoting ocular and nervous system health. One study reported that alpha lipoic acid's antioxidant capacity may help maintain healthy retinal vascular endothelial growth factor (VEGF) function. Another study suggested that alpha lipoic acid supports retinal capillary health by maintaining healthy advanced glycation end product (AGE) activity. In one trial, alpha lipoic acid indicated the potential to enhance visual acuity. It also supported nerve health in subjects who participated in a four-month randomized double blind placebo-controlled multi-center trial. The ability of this nutrient to maintain healthy nitric oxide metabolite activity and to promote healthy microcirculation accounted for its ability to promote nerve cell health in two separate studies. One study reported that alpha lipoic acid may have an affinity for retinal ganglion cells, suggesting a potential protective mechanism.

*Alpha Lipoic Acid is a multifunctional, versatile nutrient that plays a key role in maintaining healthy retinal nerve function.\**

REFERENCE: Chidlow G, et al. Alpha-lipoic acid protects the retina against ischemia-reperfusion. *Neuropharmacology.* 2002 Nov;43(6):1015-25.

each vegetable capsule contains 		
alpha lipoic acid (thioctic acid) ..... 200 mg.		
vitamin C (as ascorbyl palmitate) ..... 16 mg. (hypo-allergenic plant fiber added to complete capsule volume requirement)		
<b>1-4 capsules per day, in divided doses, with meals.</b>		
	<b>quantity</b>	<b>order code</b>
<b>Alpha Lipoic Acid 200 mg.</b>	<b>120</b>	<b>AL21</b>
	<b>60</b>	<b>AL26</b>

## Vitamin A

*Essential nutrient for visual function\**

\*Vitamin A is a fat-soluble vitamin that exists in three main active forms: retinol, retinal, and retinoic acid. Each of these forms are essential for supporting growth, reproductive function, the immune system, maintenance of skin and mucous membranes, as well as vision. The role vitamin A plays in eye health is one of its most well defined and extensively researched. It is responsible for supporting the process that turns visual light, via the rhodopsin-opsin cycle in the retina, into neural signals that are sent to the visual cortex. Rhodopsin is required for light absorption and the presence of vitamin A ensures that it is functioning optimally in rod cells to promote dark adaptation, or night vision. Vitamin A also nutritionally supports the cornea.

*Vitamin A promotes healthy structural integrity and visual signaling of the eye.\**

REFERENCE: Mata NL, et al. Isomerization and oxidation of vitamin A in cone-dominant retinas: a novel pathway for visual-pigment regeneration in daylight. *Neuron.* 2002 Sep 26;36(1):69-80.

each softgel capsule contains		
vitamin A (from fish liver oil, preservative free)..... 25,000 i.u.		
<b>1 capsule per day, with a meal.</b>		
	<b>quantity</b>	<b>order code</b>
<b>Vitamin A</b>	<b>100</b>	<b>VA1</b>


## Zinc (citrate)

*Highly bioavailable form of zinc for eye health\**

\*Zinc is a constituent of over two dozen enzymatic reactions in the body, two of which are within the retina. A concentrated pool of zinc exists in the retina and is used to support the rhodopsin-opsin cycle for healthy night vision and synaptic transmission of nerve impulses to the brain. A pilot trial conducted at the Louisiana State University Medical Center reported that zinc may promote macular health. Another study indicated that zinc supports retinal pigment epithelium (RPE) health. As a component of superoxide dismutase (SOD), zinc promotes cellular antioxidant protection. Furthermore, zinc has been reported to bind to melanin rich tissues in the iris and to enhance antioxidant activity in the eye.

*Zinc (citrate) is a highly bioavailable form of zinc important for a wide range of ocular functions.\**

REFERENCE: Newsome DA, Swartz M, Leone NC, Elston RC, Miller E. Oral zinc in macular degeneration. *Arch Ophthalmol.* 1988 Feb;106(2):192-8.

each vegetable capsule contains 		
zinc (citrate) .....		30 mg.
vitamin C (as ascorbyl palmitate) .....		4 mg.
(hypo-allergenic plant fiber added to complete capsule volume requirement)		
<b>1-2 capsules per day, in divided doses, with meals.</b>		
	<b>quantity</b>	<b>order code</b>
<b>Zinc (citrate)</b>	<b>180</b>	<b>ZC1</b>
	<b>60</b>	<b>ZC6</b>

## Ascorbic Acid


*Powerful antioxidant support for lens health and vascular integrity\**

\*Vitamin C is a powerful antioxidant and coenzyme throughout the body, including the eyes. Vitamin C levels are generally 10-50 times higher in the eyes than the plasma, but diminish naturally with age. This water-soluble compound enhances healthy vision by supporting glutathione activity, quenching superoxide molecules, and promoting healthy blood flow. A number of studies have indicated vitamin C to be particularly protective of the eye lens, promoting visual clarity. One study reported that vitamin C may maintain healthy ocular sorbitol production. Optimal vascular and capillary integrity are dependent on vitamin C and its role in collagen and glycosaminoglycan (GAG) production. A clinical trial suggested that vitamin C supported healthy intraocular flow and comfort.

*Vitamin C provides an essential component for optimal lens longevity and vascular circulation.\**

REFERENCE: Valero MP, et al. Vitamin C is associated with reduced risk of cataract in a Mediterranean population. *J Nutr.* 2002 Jun;132(6):1299-306.

### Ascorbic Acid capsules

each vegetable capsule contains 		
ascorbic acid .....		1,000 mg.
vitamin C (as ascorbyl palmitate) .....		20 mg.
<b>1-4 capsules per day, in divided doses, with meals.</b>		
	<b>quantity</b>	<b>order code</b>
<b>Ascorbic Acid capsules</b>	<b>250</b>	<b>A12</b>
	<b>90</b>	<b>A19</b>

### Ascorbic Acid powder

each scoop contains		
ascorbic acid .....		3,200 mg.
<b>1/4 to 1/2 scoop or more as needed.</b>		
	<b>quantity</b>	<b>order code</b>
<b>Ascorbic Acid powder</b>	<b>227g.</b>	<b>AAP</b>

## Ginkgo 32/9™


*Provides ginkgoheterosides and terpene lactones to support vascular function and vision\**

\**Ginkgo biloba* offers nutritional support to the vascular system and eyes by sustaining the strength and elasticity of blood vessels and capillaries, as well as by acting as a free radical scavenger. The active components of *Ginkgo biloba*, ginkgoheterosides and terpene lactones, enhance the flow of oxygen and blood and support transmission of nerve impulses throughout the body, including the brain and eyes. A phase I cross-over trial performed at the Indiana University Medical Center indicated that ginkgo promoted end diastolic velocity (EDV) in the ophthalmic artery, supporting healthy vision. Another study suggested that ginkgo extract may act as a neuroprotectant. Furthermore, a double blind study reported that *Ginkgo biloba* extract helped to support visual field range.


*Ginkgo 32/9™ is standardized to contain 32% ginkgoheterosides and 9% terpene lactones, providing potential support for healthy circulation and visual function.\**

REFERENCE: Quaranta L, Bettelli S, Uva MG, Semeraro F, Turano R, Gandolfo E. Effect of Ginkgo biloba extract on preexisting visual field damage in normal tension glaucoma. *Ophthalmology.* 2003 Feb;110(2):359-62.

### Ginkgo 32/9™ 160 mg.

each vegetable capsule contains 		
Ginkgo biloba extract (67:1) .....		160 mg.
(standardized to contain 32% ginkgoheterosides and 9% terpene lactones)		
terpene lactones provide (typically):		
ginkgolide A: .....		2.5%
ginkgolide B: .....		0.8%
ginkgolide C: .....		1.5%
bilobalides .....		4.2%
(hypo-allergenic plant fiber added to complete capsule volume requirement)		
<b>1-2 capsules per day, in divided doses, between meals.</b>		
	<b>quantity</b>	<b>order code</b>
<b>Ginkgo 32/9™ 160 mg.</b>	<b>120</b>	<b>GB311</b>
	<b>60</b>	<b>GB316</b>

### Ginkgo 32/9™ 80 mg.

each vegetable capsule contains 		
Ginkgo biloba extract (67:1) .....		80 mg.
(standardized to contain 32% ginkgoheterosides and 9% terpene lactones)		
terpene lactones provide (typically):		
ginkgolide A: .....		2.5%
ginkgolide B: .....		0.8%
ginkgolide C: .....		1.5%
bilobalides .....		4.2%
(hypo-allergenic plant fiber added to complete capsule volume requirement)		
<b>1-4 capsules per day, in divided doses, between meals.</b>		
	<b>quantity</b>	<b>order code</b>
<b>Ginkgo 32/9™ 80 mg.</b>	<b>120</b>	<b>GB381</b>
	<b>60</b>	<b>GB386</b>