

# Color Guard™



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Color Guard™ contains a mix of botanicals and nutrients specifically selected for their powerful antioxidant activities against environmental toxicants. This formula has been selected to combat common indoor mold mycotoxins, especially those that are considered “persister” mycotoxins. These mycotoxins are able to persist in the body due to their high binding affinity to albumin, impeding their excretion by the kidneys. This includes mycotoxins such as Ochratoxin, Zearalenone, and Citrinin. Bioflavonoids displace mycotoxins from albumin, and prevent or attenuate their toxic consequences.

Bioflavonoids are the colorful pigments in plants, which provide numerous beneficial effects for optimal metabolic health. The medicinal properties of these polyphenolic compounds include antioxidant, anti-cancer, anti-microbial, neuroprotective, and anti-inflammatory.

Exposure to respirable mold spores is associated with chronic histological changes of the lung tissue, including chronic inflammatory responses involving mast cells. Mold spores increase mast cell recruitment and degranulation, as well as enhance mast cell survival. This modulates gene expression to favor increased inflammatory responses to mold and other respirable allergens.

Flavonoids activate antioxidant pathways and “modulate the expression and activation of cytokines such as interleukin-1beta (IL-1β), Tumor necrosis factor-alpha (TNF-α), interleukin-6 (IL-6), and interleukin-8 (IL-8); regulate the gene expression of many pro-inflammatory molecules such as nuclear factor kappa-B cells (NF-κB), activator protein-1 (AP-1), intercellular adhesion molecule-1 (ICAM), vascular cell adhesion molecule-1 (VCAM), and E-selectins; and also inhibits inducible nitric oxide (NO) synthase, cyclooxygenase-2, and lipoxygenase, which are pro-inflammatory enzymes.”\*

Mycotoxins, in particular, cause extreme amounts of oxidative damage in almost all tissues in the body, but especially lipid-rich tissues, leading to enhanced genetic expression of pro-inflammatory cytokines. Special attention was given when formulating Color Guard™ to include both water- and fat-soluble bioflavonoids for a broader array of protection than most antioxidant formulas.

## Supplement Facts

Serving Size 2 capsules  
Servings Per Container 30

Amount Per Serving	% Daily Value
Maqui Berry Extract (MaquiCare™) ( <i>Aristotelia chilensis</i> )(whole fruit, pomace) [standardized to contain 7% delphinidins]	200 mg *
Ginkgo Extract ( <i>Ginkgo biloba</i> )(leaf) [standardized to contain 24% ginkgoflavonolglycosides and 5.4% terpenolactones]	120 mg *
Bilberry Extract ( <i>Vaccinium myrtillus</i> )(fruit) [standardized to contain 25% anthocyanidins]	80 mg *
Vitamin E Isomers (as DeltaGold® delta and gamma tocotrienols)	50 mg *
Lutein (from Marigold Extract [Lutemax® 2020])	20 mg *
Zeaxanthin Isomers (from Marigold Extract [Lutemax® 2020])	4 mg *
Astaxanthin (AstaREAL™) (from <i>Haematococcus pluvialis</i> algae extract)	2 mg *

\*Daily Value not established.

**Other Ingredients:** Cellulose (capsule), dicalcium phosphate, vegetable stearate, microcrystalline cellulose, silicon dioxide.

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Lutemax® 2020 is a registered trademark of OmniActive Health Technologies, Ltd.  
DeltaGold® is a registered trademark of American River Nutrition, LLC and protected by US Patent No. 8,586,109.  
AstaREAL® is a registered trademark of Fuji Chemical Industry Co., Ltd.

## Recommended Use

Take two capsules per day with meals, or as directed by your healthcare practitioner.  
Does not contain gluten, dairy, soy, or GMOs.

## **Maqui Berry Extract (standardized to contain 7% delphinidins)**

Maqui berry (*Aristotelia chilensis*) is a super-fruit, rich in bioavailable anthocyanins. Delphinidins represent the most potent antioxidant anthocyanin. They significantly reduce oxidative stress (oxidized LDL and F2-isoprostane) and blood glucose in controlled clinical trials, and exhibit genoprotective activity against mycotoxin exposure in various cancer cells.

Delphinidins counteract the vascular inflammation so often seen with mold-affected patients, and may contribute to thrombosis prevention by decreasing platelet activity. They have a particularly significant protective effect on the macula through UV-protection, which is important for mold-affected patients, as many complain of vision changes since their exposure.

## **Ginkgo (standardized to contain 24% ginkgoflavonolglycosides and 6% terpene lactones)**

Ginkgo biloba is neuroprotective, cardioprotective, gastroprotective, and has antioxidant properties shown to assist with multiple degenerative processes. In a mouse model of asthma, evaluation of lung histology after Ginkgo ingestion showed that it alleviated chronic histological changes of the lung including reduction of mast cells.\*

Ginkgo exhibited “cytotoxic activity against a variety of human cancers by suppressing various pro-inflammatory signaling cascades and oncogenic transcription factors through multiple modes of action in various.”\*

## **Bilberry (standardized to contain 25% anthocyanidins)**

Mold is a potent inducer of mucosal and skin irritation, inflammation, and allergic responses including mast cell recruitment and degranulation. It can also lead to systemic chronic inflammatory responses. Other environmental toxicants such as PM2.5 are correlated with oxidative damage.

Bilberry (*Vaccinium myrtillus*) alleviates inflammation and acts as an antioxidant, decreasing plasma biomarkers of inflammation and tissue damage. Anthocyanins from bilberry inhibit mast cell degranulation and ease pruritus related to mold or other environmental allergen exposures.

## **Vitamin E**

Vitamin E tocotrienols are lipid-soluble antioxidants. Mycotoxins are lipid-soluble as well, causing lipid-rich tissue to sustain oxidative and inflammatory damage. Tocopherols play a preventive role in the histopathological changes seen with mold spore and mycotoxin exposure. Tocopherols are immunoprotective, hepatoprotective, cardioprotective, and nephroprotective as related to mycotoxin exposure.

Color Guard™ pairs well with MycoRepel™ to offer maximum antioxidant protection for patients currently being exposed to a damp or mold-infested building.

## Lutein

The carotenoid lutein is the predominant carotenoid in human brain tissue. Higher lutein status is related to better cognitive performance, and lutein supplementation improves cognition. Neuroprotective biological effects include antioxidation, anti-inflammation, and a possible structural role.

Lutein has been shown to protect cells of the immune system and gastrointestinal tract from mycotoxin-induced oxidative stress and apoptosis through prevention of NF-kappa $\beta$  nuclear localization and down regulation of NF-kappa $\beta$  and Cyclooxygenase-2 expression in cell studies.\* Lutein is also protective against eye diseases.\*

## Zeaxanthin and Astaxanthin

The kidneys are the primary organs of detoxification for many inflammatory markers resulting from mold exposure as well as being the chief direct excretion organ of mycotoxins. In order for the kidneys to filter the mycotoxins into urine, many mycotoxins must first be denatured from their high-affinity bond to the blood protein albumin.

Bioflavonoids assist with this denaturing process, specifically those in the orange color band, such as astaxanthin and zeaxanthin. These fat-soluble bioflavonoids protect against mycotoxin-induced myocardial, kidney, and lung injury via the Nrf2 pathway.

## Therapeutic Differences by Composition



Astaxanthin as AstaREAL® maintains its unique fat-soluble molecular structure and conjugated carbon chain configuration, which enables it to remove high-energy electrons from damaging free radicals.

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