PROTOCOL FOR LIFE BALANCE®

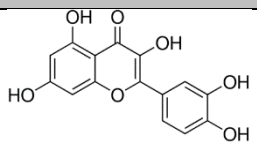
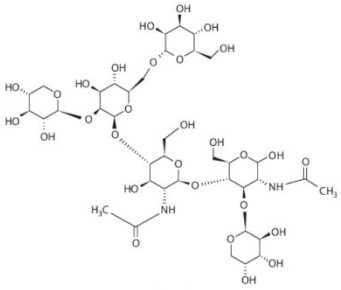
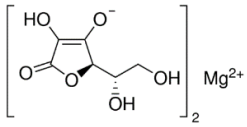
Dietary Supplement Information
for Physicians with Naturokinetics®
PRODUCT CODE: P3282
CATEGORY: SEASONAL SENSITIVITY*

Aller-All™

TECHNICAL SUMMARY

Aller-All™ is a well-balanced blend of vitamins, minerals and botanicals. These nutrients are known for their ability to support the body's balanced response to environmental and seasonal changes.* Aller-All™ combines quercetin, bromelain, and vitamin C to work together to support healthy respiratory structures and functions.* This combination is also known to support the body's normal response to typical seasonal challenges.* Other ingredients, such as B vitamins, zinc, magnesium, and licorice root have been included to further support both the respiratory and immune systems.*

Chemical Name and Structure Formula:

Ingredient	Chemical Name	Structural Formula
Quercetin	2-(3,4-Dihydroxyphenyl)-3,5,7-trihydroxy-4H-1-benzopyran-4-one	
Bromelain (enzyme from pineapple)	alpha-L-fucopyranosyl-(1->3)-[alpha-D-mannopyranosyl-(1->6)-[beta-D-xylopyranosyl-(1->2)]-beta-D-mannopyranosyl-(1->4)-2-acetamido-2-deoxy-beta-D-glucopyranosyl-(1->4)]-2-acetamido-2-deoxy-D-glucopyranose	
Vitamin C (as Magnesium Ascorbate)	L(+)-Ascorbic acid magnesium salt	

Allergen and Additive Disclosure: Not manufactured with wheat, gluten, soy, milk, egg, fish, shellfish or tree nut ingredients. Produced in a GMP facility that processes other ingredients containing these allergens.

Delivery Form: Tablet

ROLE AS NUTRIENT/FUNCTION

Components of Aller-All™ are well-known for their ability to support immune system function and to modulate a balanced immune response.* Experimental and *in vivo* research has demonstrated that quercetin possesses free radical scavenging and immunomodulatory properties.* Scientific data suggests that its immunomodulatory effects are related to its ability to interfere with leukotriene and prostaglandin availability and function, mast cell optimization, and baso- and neutrophilic leukocyte function when activated by environmental triggers.*

Vitamin C is known for its wide range of physiological effects, including supporting immune function.* Furthermore, some recent studies suggest that, through its antioxidant properties, vitamin C contributes to the maintenance of healthy respiratory epithelium.*

Supplement Facts

Serving Size 3 Tablets Servings Per Container 20

	Amount Per Serving	% Daily Value
Vitamin C (from Magnesium Ascorbate)	500 mg	556%
Vitamin B-6 (from Pyridoxine HCl)	20 mg	1176%
Pantothenic Acid (from Calcium Pantothenate)	100 mg	2000%
Calcium (from Calcium Carbonate and Calcium Pantothenate)	85 mg	7%
Magnesium (from Magnesium Ascorbate)	40 mg	10%
Zinc (from L-OptiZinc® Monomethionine)	10 mg	91%
Quercetin (from Quercetin Dihydrate)	800 mg	†
Nettle Extract (*Urtica dioica*) (Leaf)	500 mg	†
Bromelain (2400 GDU/g)	435 mg	†
Licorice Root Extract (*Glycyrrhiza glabra*)	200 mg	†

† Daily Value not established.

Other ingredients: Stearic Acid (vegetable source), Croscarmellose Sodium, Microcrystalline Cellulose, Hypromellose (cellulose), Vegetarian Coating, Silicon Dioxide and Magnesium Stearate (vegetable source).

- **Immune System Support***
- **Balanced Immune Response***
- **Oval Tablet**

SUGGESTED USAGE: Take 3 tablets daily, preferably on an empty stomach, or as directed by your healthcare practitioner. Persons with sensitive stomachs may take with food.

Bromelain has a long history of use in traditional herbalism. Scientific research suggests that bromelain's proteolytic activity may act on soluble proteins and cell surface proteins involved in immunomodulatory pathways, thus helping to regulate normal immune responses.*

NATUROKINETICS®

Liberation: Disintegration of the tablet is measured in water using a USP testing method with disintegration between zero and 80 minutes.

Absorption: Quercetin is known to be poorly absorbed in the gastrointestinal tract mainly by passive diffusion. It has been reported in scientific literature that quercetin absorption is increased when taken with a fat containing meal; bromelain and vitamin C may also contribute to higher quercetin bioavailability.

Vitamin C is actively absorbed in the small intestine by sodium-dependent vitamin C transporters (SVCT) in a dose-dependent manner. At low gastrointestinal ascorbate concentrations, active transport predominates while simple passive diffusion occurs at high concentrations. Seventy to 90% of dietary ascorbic acid intake is absorbed. Absorption rate decreases to 50% or less with increased daily ingestion above 1g/d.

Bromelain has been shown in clinical studies to reach peak concentrations between 24 and 51 hours post administration. Bioavailability of bromelain in preclinical models has been found to be 2-4%.

Distribution: Quercetin is rapidly metabolized in the intestine epithelium and liver after oral ingestion. Data on the tissular distribution of quercetin is lacking due to its extensive and rapid metabolization. However, many quercetin metabolites have been detected in plasma as glucuronides, sulfates and O-methylated derivatives. In preclinical animal studies, after ingestion of quercetin glucoside, quercetin metabolites were found mainly in the GI tract, and to a lesser extent in the liver, kidney, spleen, brain, lung, heart, muscle and testes.

Vitamin C distribution in the body is influenced by its dose-dependent intestinal absorption and the renal regulation of its elimination. These two mechanisms allow for the conservation of vitamin C during period of low intake and elimination of high blood levels when dietary intake is high. Furthermore, tissue-specific cellular transporter systems regulate the tissue concentration of vitamin C. High levels of vitamin C are maintained in pituitary and adrenal glands, leukocytes, eyes, and brain. Low levels are found in the plasma and saliva.

Upon entering serum, bromelain is associated with anti-proteinases alpha-2-macrogloblin and alpha-1-antitrypsin to reduce enzymatic activity without destroying it. Tissular distribution of bromelain outside of the bloodstream is largely unknown. However, in a clinical study, volunteers receiving 500 mg bromelain twice daily for 30 days had bromelain present in the nasal and sinus mucosa at the end of the supplementation period. These results suggest that bromelain can diffuse in some tissues outside of the bloodstream.

Metabolism: Quercetin is metabolized in the intestines and liver. Many metabolites have been isolated; however, the functions of each have yet to be fully elucidated.

Vitamin C is consistently recycled with only small amounts lost to catabolism. The primary products of vitamin C oxidation (catabolism) are dehydroascorbic acid (DHA), oxalic and threonic acids, L-xylose, and ascorbate 2-sulfate.

The metabolism of bromelain remains largely unknown.

Elimination: Some quercetin metabolites are secreted in the portal circulation and lymph and then eliminated in the intestine. Some pre-clinical data suggest that other metabolites of quercetin are eliminated in urine.

Vitamin C elimination is tightly regulated by the kidneys. When dietary intake is below or equal to 80 mg/d, only little unmetabolized vitamin C is eliminated in urine. Renal excretion of vitamin C increases proportionally with higher dietary intake.

Bromelain's mode of elimination is largely unknown.

CLINICAL VALIDATION

Supports Immune Health.*

- In an 8-week, randomized double-blind clinical trial, healthy subjects who exercised on a regular basis received 500 mg quercetin + 250 mg vitamin C per day or placebo. Subjects in the treatment group had lower blood CRP levels after supplementation vs. baseline from 1.37 mg/L to 0.70 mg/L ($p<0.01$). These results indicate that the combination of vitamin C and quercetin supplementation may support a healthy immune function.*
- In a randomized, double-blind, placebo-controlled study, participants were supplemented with a low dose bromelain, high dose bromelain or placebo for three identical 1-week periods. Blood samples were collected from participants in each group and assessed for trends in cytokines, and cell mediator interferon gamma (IFNγ) to determine the effect of oral bromelain on immune cell responses. Results showed higher intakes of bromelain affected T-helper cell, IFNγ and IL-5 activity compared to placebo. (Figure 1)

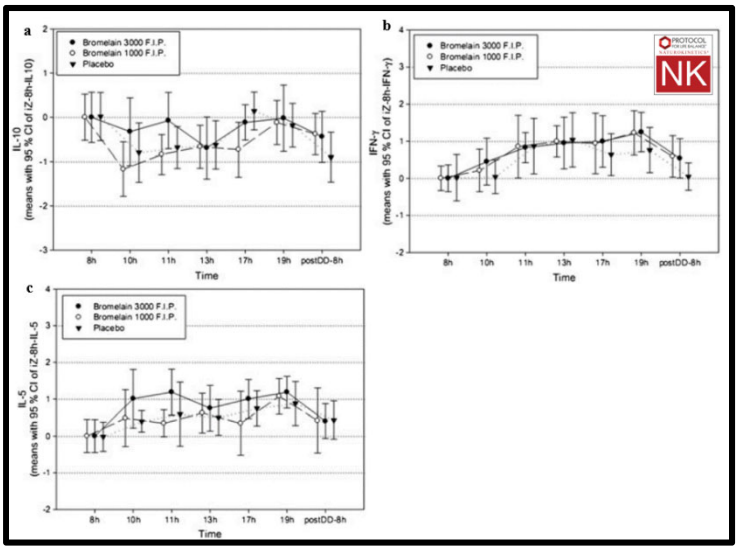


Fig. 1: Means with 95% confidence intervals for leukocyte activity in healthy volunteers. Blood samples from healthy volunteers in all three groups were measured for (1a) IL-10 activity, (1b) IFNγ activity, and (1c) IL-5.

SAFETY INFORMATION

Tolerability: Quercetin is usually well tolerated when taken orally. Side effects of quercetin may include flushing, sweating, nausea, and vomiting.

Vitamin C is well tolerated. Diarrhea and gastrointestinal disturbances may be observed for daily intakes at or above 2g/d.

Bromelain supplementation may be accompanied with mild GI disturbance.

Contraindications: Allergy to pineapple

INTERACTIONS

Drug Interactions: Quercetin may interfere with medications metabolized by cytochrome P450 pathways, thus increasing the level and prolonging the half-life of these medications, including cyclosporine, Taxol®, certain oral hypoglycemic agents, NSAIDs, coumadin, certain antiretroviral agents, H2 antagonists and others. Quercetin may also hinder absorption of some oral antibiotics.

Taking vitamin C with statins and/or niacin may decrease their beneficial effects. Vitamin C may affect the absorption and effectiveness of certain chemotherapeutic drugs and anticoagulants such as warfarin, especially when supplemented in high doses. When taken with estrogen, vitamin C may increase estrogen levels and estrogen related side effects.

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

Bromelain may interact with anticoagulant/antiplatelet medications. Some evidence suggest bromelain may interact with amoxicillin.

Supplement Interactions: Quercetin may interact with hypoglycemic and hypotensive supplements including Panax ginseng, Devil's claw, fenugreek, arginine, fish oil, CoQ10 and others.

Rose hips and acerola naturally contain significant amounts of Vitamin C; if administered with vitamin C as separate supplements, this could result in exceeding the tolerable upper limit of 2 g/d. At higher doses of vitamin C, copper and iron supplementation absorption may be affected.

Bromelain is thought to have anticoagulant/antiplatelet activity and may theoretically interact with other supplements that exhibit similar properties including fenugreek, garlic, ginger, and others.

Interaction with Lab Tests: Large amounts of ascorbic acid can cause a false increase in results of serum tests for bilirubin, aspartate aminotransferase, creatinine, and a false decrease in serum results for lactic dehydrogenase. Bromelain may increase bleeding time due to its antiplatelet activity.

STORAGE

Store in a cool, dry place.