



Th2 Modulator

Introduced 2018



What Is It?

Th2 Modulator contains a blend of N-acetyl-L-cysteine (NAC), quercetin, perilla seed and astragalus extracts to help modulate the Th2 immune response, to support TH1/Th2 balance, self-tissue response, and mucosal health. †

Features

- Part of the PureResponse™ Immune Protocol for healthy immune balance and function†
- Offers support for self-tissue response, particularly for the sinus, respiratory and gastrointestinal systems†
- Contains perilla seed extract for a concentrated source of polyphenols, rosmarinic acid, luteolin and other beneficial compounds to support healthy modulation of mucosal immune responses to environmental factors†

Modulate Th2 Immune Response: Th2 Modulator helps support healthy modulation of Th2 cytokines, and eosinophil and mast cell activity. Th2 response is affected by stress, aging, and cytokine changes resulting from metabolic, hormonal, physiological, and environmental factors. Perilla maintains healthy upper respiratory cytokine levels in animal models of Th2 dominance. Quercetin is known for its antioxidant activity and immune support properties, including support for Th1/Th2 balance and cytokine balance. Preliminary research indicates that astragalus supports a healthy Th1/Th2 balance through modulation of Th2-associated cytokines†

Mucosal Health: Th2 Modulator helps maintain healthy modulation of mucosal immune responses to environmental factors. Th2 modulation may be indicated when addressing immune balance in the sinus, respiratory, urinary, and intestinal tracts. Perilla supports cytokine homeostasis of G.I. mucosal tissue. N-acetyl-L-cysteine (NAC) offers mucolytic properties and promotes tissue levels of glutathione, a key component of the antioxidant defense system, to support the body's natural defense system. Lymphocytes rely on glutathione to function properly. It is believed to be through this antioxidant mechanism that NAC supports healthy Th1/Th2 balance and cytokine production to maintain tissue health. A multicenter,

randomized, double-blind trial with 262 participants indicated that NAC supplementation for six months supported upper respiratory tract and immune system health.†

What is the Source?

N-Acetyl-L-Cysteine is derived from corn dextrose fermentation. Quercetin is derived from Fava d'anta tree (*Dimorphandra mollis*) pods and cat's claw (*Uncaria tomentosa*) leaves. Perilla extract is derived from *Perilla frutescens L.* seed. Astragalus extract is derived from *Astragalus membranaceus* root.

Recommendations

Pure Encapsulations® recommends 2 capsules, 1-2 times daily, with meals, or as directed by a health professional.





Are There Any Potential Side Effects or Precautions?

If pregnant or lactating, consult your physician before taking this product. Rare side effects of NAC can include nausea, vomiting, headache, dry mouth, dizziness, or abdominal pain. Consult your physician for more information.

Are There Any Potential Drug Interactions?

Quercetin may react with calcium channel blockers, estradiol, and immune suppressive drugs. NAC may interact with nitroglycerin and metoclopramide. Consult your physician for more information.

Th2 Modulator

two vegetarian capsules contain				v	
N-Acetyl-L-Cysteine	300 mg				
quercetin.....	250 mg				
perilla (<i>Perilla frutescens</i>) extract (seed)	150 mg				
(standardized to contain 3% polyphenols)					
astragalus (<i>Astragalus membranaceus</i>) extract (root).....	125 mg				
other ingredients: vegetarian capsule (cellulose, water)					
2 capsules, 1-2 times daily, with meals, or as directed by a health professional.					

(continued)

†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. 800-753-2277 | PureEncapsulations.com

Identifying the Primary Drivers of Immune Balance

PureResponse™ addresses the interrelationships between elements of the immune system, the environment and other biological processes, as overviewed in the roadmap on the next page (Figure 1). Although these basic connections are the same for all patients, each patient's manifestation is unique, with a greater emphasis on some elements compared to others.†

Navigating the Roadmap

The health of organs, connective tissue and other structures in the body is maintained, in part, by a set of immunological feedback loops that connect cell signaling cytokines, stress mediators and T-cell populations with far-reaching effects.

- Cytokine activation and self-tissue response (large red circles) activate each other. Cytokines are chemical messengers that allow the immune system to communicate. Self-tissue response occurs when the immune system mistakes tissue in the body for an immunological threat causing an immune response.
- Metabolic, hormonal, physiological and environmental factors (orange boxes) can influence cytokines. Cytokine balance is important for not only directing the immune response but also for its resolution.
- Stress and intestinal bacteria (smaller red circles) also influence cytokine activity. Persistent or excess cytokine activation may diminish innate immunity and the number of Th1 cells. Reductions in these key immune defenses can influence microorganism populations throughout the body. This is often exemplified by altered intestinal microbial balance. In turn, alterations in microbial balance can drive further cytokine activation.
- Th1/Th2 cell populations (blue circles) are deeply involved in immune system balance, natural defenses and tissue health. Higher Th1 status supports cell-mediated immune defenses and helps maintain innate immunity. Lower Th2 status helps to keep Th1 status strong, while maintaining sinus and respiratory tolerance to environmental particles.
- Th17 status (purple stars) is affected by Th1/Th2 balance and is involved in healthy self-tissue response.

