This product is a specialized preparation of botanicals and nutrients formulated to support immune health and provide immediate support for respiratory challenges. The standardized botanicals and nutrients in this product target sinus-related issues by clearing airway passages, decreasing the viscosity of mucus and supporting immune health.

Overview
Optimal sinus health requires proper circulation through the sinus cavities that is free of mucus build-up. The sinuses are composed of hollow cavities that are lined with soft tissue, called mucosa. Under healthy conditions, the sinuses are empty and contain a thin layer of mucus. A healthy process that occurs in the sinus cavities, termed mucociliary clearance, allows the ciliated epithelium (hair-like structures located on tissues), in coordination with mucus production, to continually remove waste from the sinuses by facilitating drainage and particle removal. Typical particles that collect in the sinus cavities include dust, pollen, dirt, allergens and fungi. This product contains a synergistic blend of ingredients that support sinus health by increasing mucociliary clearance, decreasing the build-up of mucus and boosting immune response during seasonal respiratory challenges.

N-Acetyl Cysteine†
N-acetyl cysteine (NAC) is a powerful amino acid that dissolves mucus by breaking up disulfide bonds which make up the protein network that contributes to mucus density. This results in improved drainage out of the sinus cavity. In a double-blind study examining 12 healthy volunteers with slow mucociliary clearance, NAC administration for 60 days resulted in a 35% increase in mucociliary clearance rate in treated subjects, compared to no improvement in the placebo group.[1]

Additional studies have also demonstrated an improvement in mucus clearance following NAC administration.[2]
Turmeric Root Extract†

Curcumin is a yellow-colored plant pigment found in the spice, turmeric. This product contains turmeric standardized to contain 95% curcumin. Research shows that curcumin affects numerous molecules that support healthy inflammatory response. This includes down-regulating the activity of cyclooxygenase-2 (COX-2) and lipoxygenase enzymes as well as (IL)-1, 2, 6, 8 and 12. Curcumin has also been shown to be a potent antioxidant that scavenges free radicals that are generated in its pathway. [5]

Bromelain†

Bromelain is a plant enzyme that is naturally found in the stem and fruit of the pineapple plant. Bromelain exerts a synergistic effect when combined with NAC due to its proteolytic effects. Bromelain has been shown to be effective at thinning nasal secretions and provides an additional benefit of balancing inflammatory response. A clinical study conducted in Germany in 2005 found that bromelain exhibited statistically significant results for supporting sinus health and soothing sinus tissues versus the control group. [6]

Berberine Sulfate Hydrate†

Berberine sulfate hydrate is a botanical extract found in the roots and barks of various plants including Oregon grape root, barberry and goldenseal. Berberine sulfate hydrate has been shown to support immune response by increasing blood flow to the spleen and by activating immune compounds such as macrophages. Berberine sulfate hydrate maintains healthy sinus function by quieting localized inflammatory response. Berberine has been shown to inhibit activator protein 1 (AP-1) [8] and inhibits thromboxane A2 from platelets. [9]

Licorice Root Extract†

Licorice root (Glycyrrhiza glabra) has been used in Western and Eastern cultures for several thousand years. Licorice’s health-promoting benefits include soothing respiratory irritation. [10] The active components in licorice, glycyrrhizin and glycyrrhetinic acid, strengthen immune response by inducing interferon activity, activating macrophages and augmenting natural killer cell activity. [11] Glycyrrhizin exerts its inflammatory balancing response by inhibiting the production of reacted oxygen species released by neutrophils. [12]

Andrographis†

Andrographis paniculata is a plant that has been used in Asian medicine for centuries. The immune boosting properties of andrographis have been researched extensively in clinical studies. Per analysis of seven double-blind controlled trials, andrographis has been shown to be a safe botanical for supporting upper respiratory tract health. [13]

In a study examining 158 patients, a standardized preparation of A. paniculata dried extract administered for five days significantly decreasing throat irritations and aided in drying nasal secretions. [14] The active component of andrographis, andrographolide, has been shown to modulate inflammatory response by inhibiting NF-kappa B. [15]

Eleuthero†

Recent studies utilizing the combination of Eleuthero and Andrographis have demonstrated the combination of herbs to be particularly helpful for patients with upper respiratory challenges. Two randomized, double-blind, placebo-controlled trials conducted in Sweden tested this combination. In the initial pilot study, 46 subjects were given Eleuthero and Andrographis three times daily for three-eight days. The second trial included 179 patients treated with the Eleuthero and Andrographis combination for three days. In both trials, a significant improvement in nasal secretions, throat irritations and general immune response were reported. [16]

Thyme†

Thyme has been traditionally used to help soothe sinuses and loosen phlegm. Thymol, the active ingredient in thyme, also has immune supporting properties and competes with pathogens commonly found throughout the sinuses and respiratory tract. [17] The German Commission E has approved thyme to help support respiratory challenges. [18]

Directions

3 capsules per day or as recommended by your health care professional.

Does Not Contain

Gluten, yeast, artificial colors and flavors.

Cautions

Do not consume this product if you are pregnant or nursing. Consult your physician for further information.

Supplement Facts†

<table>
<thead>
<tr>
<th>Serving Size: 3 Capsules</th>
<th>Servings Per Container: 20</th>
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<tbody>
<tr>
<td>3 capsules contain</td>
<td></td>
</tr>
<tr>
<td>N-Acetyl-L-Cysteine USP</td>
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<tr>
<td>Andrographis paniculata</td>
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<tr>
<td>Leaf Extract</td>
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<tr>
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<tr>
<td>Eleuthero Root Extract</td>
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<tr>
<td>(Standardized to contain 0.4% Eleutherosides)</td>
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<tr>
<td>Bromelain (2,400 GDU/g)</td>
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<tr>
<td>Berberine Sulfate Hydrate</td>
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<td>Licorice Root Extract</td>
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<tr>
<td>(Standardized to contain 12% Glycyrrhizin Complex)</td>
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* Daily Value not established

This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
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References