

# IMU-MAX



## CLINICAL APPLICATIONS

- Boosts Immune Function in Children
- Provides Support for Immune Challenges
- Maintains Normal Inflammatory Balance

## IMMUNE HEALTH

Imu-Max is a children's formula that boosts immune function and provides support for immune challenges. Imu-Max contains echinacea, one of the best-known botanicals used to boost the immune system, and propolis, a product of bee resin, which helps maintain normal inflammatory balance. Available in a convenient liquid delivery, Imu-Max contains 300 mg standardized *Echinacea angustifolia* and *purpurea* blend plus 150 mg propolis and vitamin C in a delicious berry flavor.

### Overview

The human immune system is a complex network of millions of immune cells, which act together to protect the body from constant exposure to threats from our environment. In most cases, the immune system does a great job of keeping people healthy, but may at times require additional support. Research has demonstrated the ability of Imu-Max to protect the immunity of children in the winter months. A double-blind, placebo-controlled study was carried out on the efficacy of Imu-Max in a large group of children during a 12-week winter season. In a group of 430 children ages one to five, 215 children were given Imu-Max and 215 were given a placebo. Of the 328 children who completed the study, those in the Imu-Max group experienced a decrease in upper respiratory challenges, as well as a decrease in the duration. Children in the Imu-Max group also had fewer days absent from day care, fewer unscheduled physician visits and a significant improvement in throat irritations and general immune response.<sup>1</sup>

### Propolis<sup>†</sup>

Propolis is a resinous substance collected by bees to seal their hives and has traditionally been used in folk medicine since

ancient times.<sup>2</sup> Propolis extract has been found to maintain normal inflammatory balance.<sup>2,3</sup> A recent review found the key active ingredients in propolis include caffeic acid phenethyl ester (CAPE) and artemillin C, which modulate the immune system by suppressing T lymphocytes and activating macrophage function.<sup>4</sup> In a study examining the effect of propolis on 50 people, the duration of upper respiratory symptoms was 2.5 times shorter in the control versus the placebo group.<sup>5</sup> Propolis has also been shown to support immune response in mice exposed to a considerable amount of stress.<sup>6</sup> Propolis contains over 300 natural compounds such as polyphenols, antioxidants and amino acids.<sup>7</sup>

### Echinacea<sup>†</sup>

Echinacea species are perennial plants native to Midwestern North America. In Native American medicine, echinacea was used more than any other plant for its wide range of applications, including providing support for immune challenges and maintaining normal inflammatory balance. Echinacea is a botanical that has been extensively studied, and validated in its health-promoting properties. An analysis of data from a randomized, double-blind, placebo-controlled trial of *Echinacea purpurea* in 524 children, ages two to 11, found that those given echinacea demonstrated improved immune response and reduction in upper respiratory challenges, compared to those receiving placebo.<sup>8</sup> A meta-analysis of three studies examining the efficacy of echinacea extracts in preventing the development of seasonal immune challenges found that those given echinacea showed a significant improvement in markers of immunity, versus children given a placebo.<sup>9</sup> An additional randomized, double-blind study found that treatment with echinacea at onset of upper respiratory

<sup>†</sup> 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.

challenges supported immune response in a much faster period of time versus placebo.<sup>10</sup>

## Directions

1 teaspoon (5 mL) 3 times per day or as recommended by your health care professional. Take with water, milk, or the beverage of your choice.

## Does Not Contain

Gluten, corn, yeast, artificial colors and flavors.

## Cautions

If you are pregnant or nursing, consult your physician before taking this product.

7. Farooqui T, Farooqui AA. *Front Biosci (Elite Ed)*. 2012 Jan 1;4:779-93.
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9. Schoop R, Klein P, Suter A, Johnston SL. Echinacea in the prevention of induced rhinovirus colds: a meta-analysis. *Clin Ther*. 2006;28(2):174-83.
10. Lindenmuth GF, Lindenmuth EB. The efficacy of echinacea compound herbal tea preparation on the severity and duration of upper respiratory and flu symptoms: a randomized, double-blind placebo-controlled study. *J Altern Complement Med*. 2000 Aug;6(4):327-34.

# Supplement Facts

Serving Size 1 Teaspoon (5 mL)  
Servings Per Container About 50

1 teaspoon contains	Amount Per Serving	% Daily Value
Vitamin C (as Calcium Ascorbate)	30 mg	33%
Proprietary Blend	450 mg	
Propolis Standardized Extract 1:5		*
Rose Hips Extract 1:10		*
<i>Echinacea purpurea</i> Extract (Aerial Parts)		*
<i>Echinacea angustifolia</i> Extract (Roots)		*

\* Daily Value not established

ID# 852250 250 mL (8 fl oz)

## References

1. Cohen HA, Varsano I, Kahan E, Sarrell M, Uziel Y. Effectiveness of an Herbal Preparation Containing Echinacea, Propolis, and Vitamin C in Preventing Respiratory Tract Infections in Children. *Arch Pediatr Adolesc Med*. 2004;158(3):217-221.
2. PDR Health. [www.pdrhealth.com](http://www.pdrhealth.com) Propolis.
3. Grange JM, Davey RW. Antibacterial properties of propolis (bee glue). *J Royal Soc Med*. 1990;83:159-160.
4. Chan GC, Cheung KW, Sze DM. The immunomodulatory and anticancer properties of propolis. *Clin Rev Allergy Immunol*. 2013 Jun;44(3):262-73.
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6. Orsatti CL, Sforzin JM. Propolis immunomodulatory activity on TLR-2 and TLR-4 expression by chronically stressed mice. *Nat Prod Res*. 2012;26(5):446-53.

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