



FORMULATED BY DAVID HAASE, MD

## Clinical Applications

- Promotes Healthy Immune Function\*
- Provides Antioxidant Activity\*
- Supports the Body's Defenses Against Immune Challenges\*

*Elderolive features science-based, patented Immune Guard® plus extracts of elderberry and olive to support the body's natural immune defense mechanisms.\**

All Creating Health™ Formulas Meet or Exceed cGMP Quality Standards

## Discussion

### Immune Guard®

Immune Guard is a patented blend of decaffeinated compounds from green tea standardized to 20% epigallocatechin-3-gallate (EGCG) and L-theanine, a combination that has been demonstrated to support immune system health. A randomized, double-blind, placebo-controlled study followed healthy adult subjects (n = 120) for a twelve-week period during the winter and into the spring months. Each subject recorded in a daily log any symptoms that indicated reduced immune health. Blood samples were analyzed for assessment of immune function parameters, including gamma delta T cell proliferation and gamma interferon secretion. Immune Guard resulted in a 28% increase in gamma delta T cell proliferation and secreted 26% more interferon gamma in response to gamma delta T cell antigens when compared to placebo. This increase in immune health markers corresponded with a decreased incidence of immune-related symptoms recorded by 30% of the study group.\*<sup>[1]</sup>

An additional study of the effect of Immune Guard on immune health was conducted with healthcare workers as subjects (n = 197) over a five-month period during the winter months. Volunteers were given either placebo or six capsules/day (378 mg/day of green tea catechins and 210 mg/day of theanine). The occurrence of clinically confirmed diagnoses was significantly reduced in the treatment group when compared to placebo.\*<sup>[2]</sup>

### Green Tea Extract (Camellia sinensis)

Many of the beneficial effects of green tea are dose-dependent, and most Americans are not willing to consume the necessary 5-10 cups of the tea daily to gain its advantages. The health benefits of green tea are derived from a group of phytochemicals known as polyphenols. Polyphenols in fresh green tea leaves are present as catechins, which can be isolated to yield the key beneficial constituents. The dominant and most biologically active among the catechins, (-)-epigallocatechin-3-gallate (EGCG), has been shown to induce expression of the enzymes that protect a wide variety of cells against oxidative stress and to exhibit an immunomodulatory effect in addition to other benefits.\*<sup>[3-7]</sup>

### L-theanine

L-theanine, an amino acid found in green tea, is catabolized to ethylamine, a molecule that specifically activates human gamma delta T-lymphocytes to proliferate and make interferon gamma, a powerful antimicrobial cytokine. There is ample evidence that supports the role of gamma delta T cells as a first-line immune defense mechanism.\*<sup>[8-10]</sup>

### Elderberry (Sambucus nigra)

Elderberry has a long history of traditional use in promoting immune and respiratory health. Additionally, the antioxidant activity of elderberry extracts has been evaluated in a number of studies, all suggesting a meaningful level of activity.<sup>[11-13]</sup> Elderberry fruit and leaves contain numerous compounds thought to have immune-priming effects and provide support against opportunistic microbes.<sup>[13,14]</sup> Several double-blind placebo-controlled studies using standardized elderberry extracts in the test groups have yielded positive results, including lessened duration and severity of immune-related symptoms.\*<sup>[15-17]</sup>

### Arthricor® Olive Extract (Olea europaea)

The immune health benefits of extracts from the leaf or fruit of the olive tree date back hundreds of years, including documented use during the Spanish/Latin American wars of independence in the early 1800s, for promoting the health of soldiers returning from tropical colonies. The bitter phenolic compound oleuropein was identified decades later as one of the key health-promoting components. Hydroxytyrosol and tyrosol, along with other polyphenols with beneficial activity, have also been identified. Since then, *Olea europaea* has been studied for an array of healthful attributes including antioxidant properties and effective immune support against opportunistic microbes.\*<sup>[18-23]</sup>

Continued on page 2

**\*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.**

# Supplement Facts

Serving Size: 2 Capsules  
Servings Per Container: 10

	Amount Per Serving	%Daily Value
Calories	5	
Total Carbohydrate	1 g	<1%†
Calcium (as calcium carbonate)	100 mg	8%
Immune Guard® Green Tea Extract & L-Theanine Blend ( <i>Camellia sinensis</i> )(leaves) (20% EGCG)(20% L-theanine)	600 mg	**
Elderberry ( <i>Sambucus nigra</i> )(fruit) (4% phenolics, 1% anthocyanins)	300 mg	**
Arthricor® Olive Extract ( <i>Olea europaea</i> )(fruit) (9% hydroxytyrosol, 4% oleuropein, 1% tyrosol)	150 mg	**

† Percent Daily Values are based on a 2,000 calorie diet.  
\*\* Daily Value not established.

**Other Ingredients:** Ascorbyl palmitate, capsule (hypromellose and water), and silica.

Immune Guard® US patent 8,465,782.

Arthricor® is a registered trademark of Eight-IP.

In a randomized, controlled, double-blind, crossover human trial, investigators studied the effect of olive oil on mucosal immune status over a three-week period. Hypercholesterolemic subjects (n = 10) were given three different samples that varied in amount and type of phenolic compounds. Ingestion of the sample with the highest amount of hydroxytyrosol derivatives (8.49 PC/kg) yielded increased intestinal immunity markers (fecal immunoglobulin A (IgA) and IgA-coated bacteria) and increased plasma levels of C-reactive protein (CRP), yet lower levels did not show a significant effect. These results indicate that immune system stimulation occurred with very high doses of olive oil phenolic compounds. \*<sup>[24]</sup>

**NOTE:** Calcium must be declared on a label when present at greater than 2% Daily Value. Calcium carbonate is an excipient used in **Elderolive** as a densifier; it does not contribute to the formula's intended function.

## Directions

Take two capsules at first sign of immune discomfort. On the next day and until no longer needed, take 2 capsules daily, which may be taken together or as one capsule twice a day; or use as directed by your healthcare practitioner.

Consult your healthcare practitioner prior to use. Individuals taking medication should discuss potential interactions with their healthcare practitioner. Do not use if foil is punctured.

## References

1. Rowe CA, Nantz MP, Bukowski JF, et al. Specific formulation of *Camellia sinensis* prevents cold and flu symptoms and enhances gamma,delta T cell function: a randomized, double-blind, placebo-controlled study. *J Am Coll Nutr.* 2007 Oct;26(5):445-52. [PMID: 17914132]
2. Matsumoto K, Yamada H, Takuma N, et al. Effects of green tea catechins and theanine on preventing influenza infection among healthcare workers: a randomized controlled trial. *BMC Complement Altern Med.* 2011 Feb 21;11:15. [PMID: 21338496]
3. Weisburger JH, Chung FL. Mechanisms of chronic disease causation by nutritional factors and tobacco products and their prevention by tea polyphenols. *Food Chem Toxicol.* 2002 Aug;40(8):1145-54. [PMID: 12067577]
4. Matsunaga K, Klien TW, Friedman H, et al. Legionella pneumophila replication in macrophages inhibited by selective immunomodulatory effects on cytokine formation by epigallocatechin gallate, a major form of tea catechins. *Infect Immun.* 2001 Jun;69(6):3947-53. [PMID: 11349063]
5. Pae M, Wu D. Immunomodulating effects of epigallocatechin-3-gallate from green tea: mechanisms and applications. *Food Funct.* 2013 Sep;4(9):1287-303. [PMID: 23835657]
6. Serafini M, Del Rio D, Yao DN, et al. Health benefits of tea. In: Benzie IFF, Wachtel-Galor S, eds. *Herbal Medicine: Biomolecular and Clinical Aspects.* 2nd ed. Boca Raton, FL: CRC Press/Taylor & Francis; 2011:239-262. [PMID: 22593935]
7. Butt MS, Sultan MT. Green tea: nature's defense against malignancies. *Crit Rev Food Sci Nutr.* 2009 May;49(5):463-73. [PMID: 19399671]
8. Bukowski JF, Morita CT, Brenner MB. Human gamma delta T cells recognize alkylamines derived from microbes, edible plants, and tea: implications for innate immunity. *Immunity.* 1999 Jul;11(1):57-65. [PMID: 10435579]
9. Kamath AB, Wang L, Das H, et al. Antigens in tea-beverage prime human Vgamma 2Vdelta 2 T cells in vitro and in vivo for memory and nonmemory antibacterial cytokine responses. *Proc Natl Acad Sci USA.* 2003 May 13;100(10):6009-6014. [PMID: 12719524]
10. Vuong QV, Bowyer MC, Roach PD. L-Theanine: properties, synthesis and isolation from tea. *J Sci Food Agric.* 2011 Aug 30;91(11):1931-9. [PMID: 21735448]
11. Duymuş HG, Göger F, Başer KH. In vitro antioxidant properties and anthocyanin compositions of elderberry extracts. *Food Chem.* 2014 Jul 15;155:112-9. [PMID: 24594162]
12. Mandrone M, Lorenzi B, Maggio A, et al. Polyphenols pattern and correlation with antioxidant activities of berries extracts from four different populations of Sicilian *Sambucus nigra* L. *Nat Prod Res.* 2014;28(16):1246-53. [PMID: 24666289]
13. Vlachojannis JE, Cameron M, Chrubasik S. A systematic review on the sambuci fructus effect and efficacy profiles. *Phytother Res.* 2010 Jan;24(1):1-8. [PMID: 19548290]
14. Porter RS, Bode RF. A review of the antiviral properties of black elder (*Sambucus nigra* L.) products. *Phytother Res.* 2017 Apr;31(4):533-554. [PMID: 28198157]
15. Zakay-Rones Z, Varsano N, Zlotnik M, et al. Inhibition of several strains of influenza virus in vitro and reduction of symptoms by an elderberry extract (*Sambucus nigra* L.) during an outbreak of influenza B Panama. *J Altern Complement Med.* 1995 Winter;1(4):361-9. [PMID: 9395631]
16. Zakay-Rones Z, Thom E, Wollan T, et al. Randomized study of the efficacy and safety of oral elderberry extract in the treatment of influenza A and B virus infections. *J Int Med Res.* 2004 Mar-Apr;32(2):132-40. [PMID: 15080016]
17. Tiralongo E, Wee SS, Lea RA. Elderberry supplementation reduces cold duration and symptoms in air-travellers: a randomized, double-blind placebo-controlled clinical trial. *Nutrients.* 2016 Mar 24;8(4):182. [PMID: 27023596]
18. Gorzysnik-Debicka M, Przychodzen P, Cappello F, et al. Potential health benefits of olive oil and plant polyphenols. *Int J Mol Sci.* 2018 Feb 28;19(3). [PMID: 29495598]
19. Bisignano G, Tomaino A, Lo Cascio R, et al. On the in-vitro antimicrobial activity of oleuropein and hydroxytyrosol. *J Pharm Pharmacol.* 1999 Aug;51(8):971-4. [PMID: 10504039]
20. Visioli F, Bellomo G, Galli C. Free radical-scavenging properties of olive oil polyphenols. *Biochem Biophys Res Commun.* 1998 Jun 9;247(1):60-4. [PMID: 9636654]
21. Visioli F, Wolfram R, Richard D, et al. Olive phenolics increase glutathione levels in healthy volunteers. *J Agric Food Chem.* 2009 Mar 11;57(5):1793-6. [PMID: 19219997]
22. Paradoso VM, Di Mattia C, Giannetti M, et al. Antioxidant behavior of olive phenolics in oil-in-water emulsions. *J Agric Food Chem.* 2016 Jul 27;64(29):5877-86. [PMID: 27380032]
23. Yamada K, Ogawa H, Hara A, et al. Mechanism of the antiviral effect of hydroxytyrosol on influenza virus appears to involve morphological change of the virus. *Antiviral Res.* 2009 Jul;83(1):35-44. [PMID: 19501255]
24. Martin-Peláez S, Castañer O, Solà R, et al. Influence of phenol-enriched olive oils on human intestinal immune function. *Nutrients.* 2016 Apr 11;8(4):213. [PMID: 27077879]

## Does Not Contain:

Wheat, gluten, yeast, soy, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, or artificial preservatives.

**\*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.**

Creating Health™  
1195 Old Hickory Blvd, Suite 201  
Brentwood, TN 37027  
www.creatinghealth.com

DRS-253  
REV. 02/07/19