

A.D.P.[®]

Proven Effective Against Yeast and Parasites



Science is making rapid progress in unlocking Nature's basic secrets, especially in the area of plants and foodstuffs, which supply more than just vitamins and minerals. One promising field is the study of the variety of spices used for centuries to add zest to a wide range of foods. Interestingly, long before the advent of refrigeration, it was recognized that herbs and culinary spices could slow food spoilage; natural antimicrobial principles were obviously at work.

Food scientists have become more interested in how to tap the innate properties found in essential oils and aromatic plants. Recent studies have focused on the effects of spices and associated oils on foodborne organisms in the context of food safety and spoilage. Attempts have been made to identify the active components of essential oils from spices, among them, oregano.

Utilizing "The Best of Science and Nature" to Create Superior Nutritional Supplements

Biotics Research Canada
Box 283 • Keswick ON L4P 3E2 orders@bioticscan.com
www.bioticscanada.com

By emulsifying oregano extracts, the effective surface area of the oil is dramatically increased.

To place your order for
A.D.P.[®] or for
additional information
please contact us:

(800) 840-1676

**BIOTICS
RESEARCH
CANADA**
"The Best of Science and Nature"

A.D.P.®

Emulsified Oil of Oregano — Sustained Release: Patent #5,955,086

Analysis revealed two phenolic compounds, thymol and carvacrol, as primary constituents of oregano extracts, and their antioxidant properties were reported.

Biotics Research Corporation is widely recognized for its emulsified fat-soluble nutrients and other lipids, microemulsified with the practical objective of increased absorption and bioavailability. This technology has now been applied to the oil of oregano.

By emulsifying oregano extracts, the effective surface area of the oil is dramatically increased. An additional step was to apply a gradual release mechanism to **A.D.P.®**, assuring a slow release throughout the digestive tract. The combined effect of emulsification and gradual release optimizes intestinal exposure to the essential oil.

References

1. Gilling DH, et al. Antiviral efficacy and mechanisms of action of oregano essential oil and its primary component carvacrol against murine norovirus. J of Appl Microbiology 2014
2. Pilan MR, et al. Antiviral activity of the Lippia graveolens (Mexican Oregano) essential oil and its main compound carvacrol against human and animal viruses. Brazilian J of Microbiology (2011) 42: 1616-1624.
3. Force M, Sparks WS, Ronzio RA. Inhibition of Enteric Parasites by Emulsified Oil of Oregano in vivo. Phytotherapy Research 14, 213-214 (2000).
4. Stiles JC, Sparks W, Ronzio RA. The inhibition of Candida albicans by oregano. J of Appl Nutrition, Vol. 47, No. 4, 1995.
5. Svensen AB, Scheffer JJC. Essential Oils and Aromatic Plants. Martinus Nijhoff/W. Junk Publishers (1985).
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7. Conner DE, Beauchat LD. Effects of essential oils from plants on growth of food spoilage yeast. J. Food Science (1984) 49: 429.
8. Deighton N, Glidewell SM, Deasn SG, Goodman BA. Identification by EPR specctrosopy of cavacrol and thymol as the major sources of free radicals in the oxidation of plant essential oils. J. Science Food Agriculture (1933) 63: 221
9. Sezik E., Tumen G., et al. Essential Oil Composition of Four Organum Vulgare Subspecies of Anatolian Origin. J. Essent Oil Res. (1933) 5: 425-31.

Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving
Oregano Oil (Origanum vulgare) (extract from leaf)	50 mg*

* Daily Value not established

Other ingredients: Cellulose, modified cellulose gum, potassium sorbate, stearic acid (vegetable source), silica, water and gum arabic.

A.D.P.® supplies oregano oil which is emulsified and processed in a gradual release form for optimal effectiveness. 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.

Patent #5,955,086

This product is gluten, dairy and GMO free.

RECOMMENDATION: One (1) tablet with meals and at bedtime as a dietary supplement or as otherwise directed by a healthcare professional.

CAUTION: Not recommended for pregnant or lactating women.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area.
Sealed with an imprinted safety seal for your protection.

Product # 1101 Rev. 11/17

(800) 840-1676

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GI HEALTH

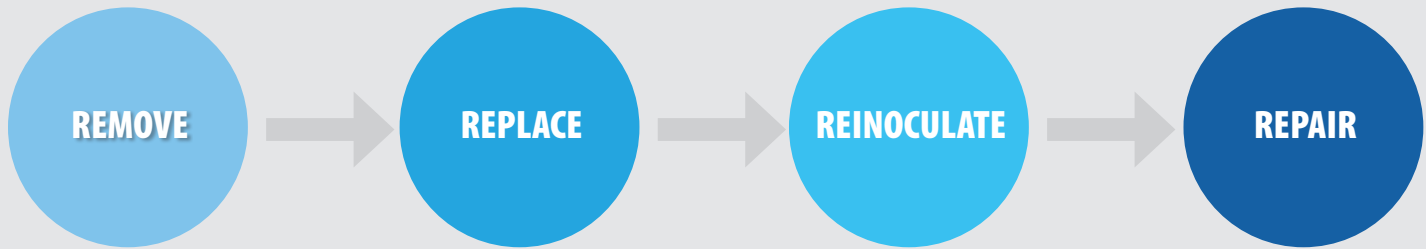


BIOTICS[®]
RESEARCH
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"The Best of Science and Nature"

SUPPLEMENTS TO SUPPORT GASTRO-INTESTINAL HEALTH

Address these stages of GI Health*



*These may not be in chronological order, depending on the specific GI issue.

REMOVE

Overgrown yeast and bacteria that may (or may not) normally live in the GI tract are removed using specific gluten free nutritional supplements, including a proven-effective patented formula.



A.D.P.[®]

Product Number: 1101 (60T) or 1104 (120T)

A.D.P.[®] is a proven-effective* patented formula. Utilizing micro-emulsification and delayed release technologies, A.D.P.[®] delivers standardized oil of oregano throughout the digestive tract, where it functions to impact undesirable intestinal organisms.

*Phytother Res 2000 May

Active Ingredients:

Oregano (*Origanum vulgare*) (standardized extract)



Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving
Oregano Oil (<i>Origanum vulgare</i>) (extract from leaf)	50 mg*

* Daily Value not established

Other ingredients: Cellulose, modified cellulose gum, potassium sorbate, stearic acid (vegetable source), silica, water and gum arabic.

A.D.P.[®] supplies oregano oil which is emulsified and processed in a sustained release form for optimal effectiveness. 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.

Patent #5,955,086

This product is gluten, dairy and GMO free.



BiomeBalance

Product Number: 7856 (120C)

BiomeBalance supplies a proprietary blend of herbs and herbal extracts to support normal gut health. Select herbs are recognized in promoting the synergistic healing of damaged intestinal tissue, resulting predominately from dysbiosis*. The combination of Eastern and Western herbs in this formula provides a broad anti-dysbiotic effect, even with low dosing.

*Glob Adv Health Med. 2014 May

Active Ingredients:

Proprietary Blend including Dill (*Anethum graveolens*) (seed), *Stemona* (*Stemona sessilifolia*) (root) (powder and extract), Wormwood (*Artemisia absinthium*) (shoot & leaf) (extract), Java Brucea (*Brucea javanica*) (fruit) (powder & extract), Chinese Pulsatilla (*Pulsatilla chinensis*) (rhizome) (powder & extract), Jamaica Quassia (*Picrasma excelsa*) (bark) (extract), Cutch Tree (*Acacia catechu*) (heartwood & bark) (powder & extract), Hedyotis (*Hedyotis diffusa*) (aerial part) (powder & extract), Yarrow (*Achillea millefolium*) (leaf & flower) (extract).



Supplement Facts

Serving Size: 2 Capsules
Servings Per Container: 60

	Amount Per Serving
Proprietary Blend	950 mg
Dill (<i>Anethum graveolens</i>) (seed) *	
<i>Stemona</i> (<i>Stemona sessilifolia</i>) (root) (powder and extract) *	
Wormwood (<i>Artemisia absinthium</i>) (shoot & leaf) (extract) *	
Java Brucea (<i>Brucea javanica</i>) (fruit) (powder & extract) *	
Chinese Pulsatilla (<i>Pulsatilla chinensis</i>) (rhizome) (powder & extract) *	
Jamaica Quassia (<i>Picrasma excelsa</i>) (bark) (extract) *	
Cutch Tree (<i>Acacia catechu</i>) (heartwood & bark) (powder & extract) *	
Hedyotis (<i>Hedyotis diffusa</i>) (aerial part) (powder & extract) *	
Yarrow (<i>Achillea millefolium</i>) (leaf & flower) (extract) *	

* Daily Value not established

Other ingredients: Capsule shell (gelatin and water) and magnesium stearate (vegetable source).

This product is gluten and dairy free.

Research shows that gut health is critical to overall health and that an unhealthy gut contributes to a wide range of diseases, conditions, an impaired immune and nervous system, and even hormonal imbalance. Supporting gastrointestinal health and restoring the integrity of the gut barrier are essential to optimizing overall health.



FC-Cidal™

Product Number: 6310 (100C)

FC-Cidal supplies a proprietary blend of herbs and herbal extracts, which function to support healthy GI function*. Herbs, spices and botanical preparations often exhibit antimicrobial properties due to a wide array of terpenoid and polyphenolic compounds. Culinary herbs have long been used to control pests and food-borne yeasts and molds in the context of food safety.

*Glob Adv Health Med. 2014 May

Active Ingredients:

Proprietary Blend including French Tarragon (*Artemisia dracunculus*) (leaf), Indian Tinospora (*Tinospora cordifolia*) (stem & root), Horsetail (*Equisetum arvense*) (whole herb), Thyme (*Thymus vulgaris*) (leaf), Pau D' Arco (*Tabebuia impetiginosa*) (inner bark), Stinging Nettle Extract (*Urtica dioica*) (root), Olive (*Olea europaea*) (leaf).



Supplement Facts

Serving Size: 1 Capsule

	Amount Per Serving
Proprietary Blend	500 mg
French Tarragon (<i>Artemisia dracunculus</i>) (leaf) *	
Indian Tinospora (<i>Tinospora cordifolia</i>) (stem & root) *	
Horsetail (<i>Equisetum arvense</i>) (whole herb) *	
Thyme (<i>Thymus vulgaris</i>) (leaf) *	
Pau D' Arco (<i>Tabebuia impetiginosa</i>) (inner bark) *	
Stinging Nettle Extract (<i>Urtica dioica</i>) (root) *	
Olive (<i>Olea europaea</i>) (leaf) *	

* Daily Value not established

Other ingredients: Capsule shell (gelatin and water), cellulose and magnesium stearate (vegetable source).

This product is gluten and dairy free.

Adjunct Products: Bio-HPF®, Berberine HCl, Caprin™, and Iodizyme-HP™

REPLACE

Bile salts, digestive enzymes, and hydrochloric acid levels are replaced using specific gluten free nutritional supplements in order to maintain and promote healthy digestion.



Beta-TCP™

Product Number: 1215 (90T) or 1216 (180T)

Beta-TCP™ supports both healthy bile flow, and the normal bile acid-to-cholesterol conversion. It contains both digestive and antioxidant enzymes, along with Taurine and organic beet concentrate.

Active Ingredients:

Vitamin C (ascorbic acid), Taurine, Pancrelipase (porcine), Organic Beet Concentrate** (Beta vulgaris) (whole), Superoxide Dismutase (raw organic vegetable culture†) and Catalase (raw organic vegetable culture†). †Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors. ** Whole beet concentrate from certified organically grown beets.



Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Vitamin C (ascorbic acid)	60 mg	100%
Taurine	100 mg	*
Pancrelipase (porcine)	50 mg	*
Organic Beet Concentrate** (Beta vulgaris) (whole)	100 mg	*
Superoxide Dismutase (from vegetable culture †)	20 mcg	*
Catalase (from vegetable culture †)	20 mcg	*

* Daily Value not established

Other ingredients: Cellulose, stearic acid (vegetable source), magnesium stearate (vegetable source) and food glaze.

† Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

** Whole beet concentrate from certified organically grown beets.

This product is gluten and dairy free.

REPLACE (continued)



Beta Plus™

Product Number: 1210 (90T) or 1209 (180T)

Beta Plus™ is a source of bile salts, digestive enzymes and organic beet concentrate, along with SOD and catalase. Consider this product whenever the gallbladder has been removed, or the need for supplemental bile salts is indicated.

Active Ingredients:

Ox Bile Extract, Pancrelipase (porcine), Organic beet concentrate** (Beta vulgaris) (whole), Superoxide dismutase (raw organic vegetable culture†), Catalase (raw organic vegetable culture†). †Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors. ** Whole beet concentrate from certified organically grown beets.



Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Ox Bile Extract	100 mg	*
Pancrelipase (porcine)	50 mg	*
Organic Beet Concentrate** (Beta vulgaris) (whole)	100 mg	*
Superoxide Dismutase (from vegetable culture †)	20 mcg	*
Catalase (from vegetable culture †)	20 mcg	*

* Daily Value not established

Other ingredients: Cellulose, stearic acid (vegetable source), magnesium stearate (vegetable source) and food glaze.

† Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

** Whole beet concentrate from certified organically grown beets.

This product is gluten and dairy free.

RECOMMENDATION: One (1) tablet with each meal as a dietary supplement



Hydro-Zyme™

Product Number: 1262 (90T) or 1263 (250T)

Hydro-Zyme™ provides digestive support via supplemental Betaine hydrochloride, Pepsin, Pancreatin, along with other known synergists. It may be considered when the need for supplemental hydrochloric acid and/or Pancreatin are indicated.

Active Ingredients:

Vitamin B6 (as pyridoxine hydrochloride), Betaine Hydrochloride, Glutamic acid (as L-Glutamic acid hydrochloride), Ammonium Chloride, Pancreatin 4X (porcine), Pepsin (1:10,000).



Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Vitamin B6 (as pyridoxine hydrochloride)	2 mg	100%
Betaine Hydrochloride	150 mg	*
Glutamic acid (as L-Glutamic acid hydrochloride)	50 mg	*
Ammonium Chloride	35 mg	*
Pancreatin 4X (porcine)	10 mg	*
Pepsin (1:10,000)	10 mg	*

* Daily Value not established

Other ingredients: Vegetable culture †, cellulose, stearic acid (vegetable source), modified cellulose gum, silica and food glaze.

† Specially grown, biologically active vegetable culture (from organic Pisum sativum, Lens esculenta and/or Cicer arietinum) containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

This product is gluten and dairy free.



Intenzyme Forte™

Product Number: 1207 (50T), 1201 (100T) or 1202 (500T)

Intenzyme Forte™ is a broad spectrum proteolytic enzyme formulation, containing pancreatin, bromelain, papain, lipase, amylase, trypsin and alpha chymotrypsin. It may be utilized to support numerous protein metabolism pathways. Proteolytic enzymes are capable of exerting influence over a wide variety of physiological and biochemical processes. The benefits of Intenzyme Forte include its effect on muscle soreness and discomfort due to overexertion, the support of hormone processing, as well as providing support for healthy digestive, immune and circulatory functions.

Active Ingredients:

Pancreatin 4X (porcine), Bromelain (from pineapple), Papain (from papaya), Lipase (porcine), Amylase (porcine), Trypsin & Alpha Chymotrypsin (porcine), Superoxide Dismutase (from vegetable culture†), Catalase (from vegetable culture†) †Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.



Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Pancreatin 4X (porcine)	100 mg	*
Bromelain (from pineapple)	50 mg	*
Papain (from papaya)	50 mg	*
Lipase (porcine)	10 mg	*
Amylase (porcine)	10 mg	*
Trypsin & Alpha Chymotrypsin (porcine)	100 mg	*
Superoxide Dismutase (from vegetable culture †)	10 mcg	*
Catalase (from vegetable culture †)	10 mcg	*

* Daily Value not established

Other ingredients: Stearic acid (vegetable source), cellulose, magnesium stearate (vegetable source) and food glaze.

† Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

This product is gluten and dairy free.

RECOMMENDATION: One (1) tablet three (3) times each day as a dietary supplement or as otherwise directed by a healthcare professional.

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.

REINOCULATE

The restoration of optimal gut flora is done using a specific gluten free probiotic



BioDoph-7 Plus®

Product Number: 1285 (60C)

Probiotics are classically defined as “a preparation of, or a product containing viable, defined microorganisms in sufficient numbers, which alter the microbiota (typically by colonization) in a compartment of the host, and by that, exert beneficial health effects in this host”.

BioDoph-7 Plus® supplies a blend of pro- and prebiotics, including Bifidobacterium bifidum, Bifidobacterium lactis, Bifidobacterium breve, Lactobacillus paracasei, Lactobacillus plantarum, Lactobacillus salivarius, and Streptococcus thermophilus, along with the prebiotics Inulin (from chicory root), Arabinogalactans (from Larch), and Marshmallow root (extract).

Active Ingredients:

Proprietary Blend including Inulin (from Chicory root), Arabinogalactans (from Larch), Marshmallow (Althea officinalis) (extract) (root), Bifidobacterium bifidum, Bifidobacterium lactis, Bifidobacterium breve, Lactobacillus paracasei, Lactobacillus plantarum, Lactobacillus salivarius, Streptococcus thermophilus. Each capsule of BioDoph-7 Plus® contains more than 20 billion organisms at time of manufacture.



Supplement Facts

Serving Size: 1 Capsule

	Amount Per Serving
Proprietary Blend	400 mg
Inulin (from Chicory root)*, Arabinogalactans (from Larch)*, Marshmallow (Althea officinalis) (extract) (root)*, Bifidobacterium bifidum*, Bifidobacterium lactis*, Bifidobacterium breve*, Lactobacillus paracasei*, Lactobacillus plantarum*, Lactobacillus salivarius*, Streptococcus thermophilus*	

* Daily Value not established

Other ingredients: Vegetarian capsule shell (modified cellulose) and magnesium stearate (vegetable source).

Each capsule of **BioDoph-7 Plus®** contains more than 20 billion organisms at time of manufacture.

Contains an ultra-trace amount (0.3 ppm) of milk constituents which are used in the fermentation of probiotic ingredients.

This product is gluten free.



BioDophilus-FOS®

Product Number: 1205 (4oz)

BioDophilus-FOS™ is a pleasant tasting powder that supplies the probiotics Lactobacillus acidophilus (DDS-1 strain), and Bifidobacterium bifidum in a prebiotic base of fructooligosaccharides. Each 1/2 teaspoon supplies 3 billion organisms, along with 1,200 mg of beet-sourced Fructooligosaccharides.

Active Ingredients:

Lactobacillus acidophilus (DDS-1) and Bifidobacterium bifidum organisms, and Fructooligosaccharides (beet source).

Refrigeration is recommended to preserve the organisms.



Supplement Facts

Serving Size: ½ Teaspoon (approx. 1.5 g)

Servings Per Container: 75

	Amount Per Serving	% Daily Value
Calories	5	
Total Carbohydrate	1 g	0% †
Sugars	0 g	*
Lactobacillus acidophilus (DDS-1) and Bifidobacterium bifidum organisms		
	3 billion	*
Fructooligosaccharides (beet source)	1,200 mg	*

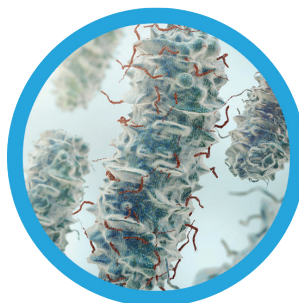
†Percent Daily Values based on a 2,000 calorie diet.

* Daily Value not established

Ingredients: Fructooligosaccharides (beet source), Lactobacillus acidophilus (DDS-1) and Bifidobacterium bifidum.



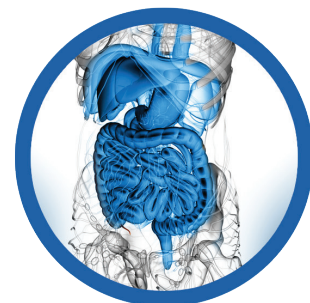
REMOVE



REPLACE



REINOCULATE



REPAIR

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.

REPAIR

Specific gluten free nutritional supplements, including vitamins, minerals, amino acids, and EFAs, are essential to gut repair and healing the damaged intestinal lining.



BioMega-1000

Product Number: 1400 (100C)

BioMega-1000 supplies the highest quality, all-natural (not modified by distillation processes) fish oil, supplying EPA and DHA omega-3 fatty acids. BioMega-1000 fish oil surpasses all national and international standards for environmental pollutants, including dioxins, PCBs, pesticides and heavy metals. The most active and beneficial derivatives of marine derived ω -3 fatty acids are eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), natural precursors that allow the body to make Specialized Pro-Resolving Mediators (SPMs), supporting healthy inflammatory responses. Both the brain and nervous system are higher in DHA, as compared to the rest of the body. As an omega-3 fatty acid, it has the ability to impact most physiological functions.

Active Ingredients: Vitamin E (as d-alpha tocopherol), Omega-3 fatty acids. Each softgel capsule of BioMega-1000 contains 1,000 mg of natural marine lipid concentrate, providing a natural source of Omega-3 fatty acids; EPA (Eicosapentaenoic acid) 180 mg and DHA (Docosahexaenoic acid) 120 mg.



Supplement Facts

Serving Size: 1 Softgel Capsule

	Amount Per Serving	% Daily Value
Calories	15	
Calories from Fat	15	
Total Fat	1.5 g	2%*
Saturated Fat	<1 g	<3%*
Vitamin E (as mixed tocopherols)	4 mg	27%
Omega-3 fatty acids	1.14 g	†

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

Other Ingredients: Capsule shell (gelatin, glycerin and water).
Contains ingredients derived from Anchovy and Sardine.
This product is gluten and dairy free.



Gastrazyme™

Product Number: 1140 (90T)

Gastrazyme™ supplies specific nutrients including vitamin U complex, chlorophyllins and vitamin A, ingredients all known to support the health of GI tract, which may become stressed due to normal, everyday factors. Early studies have recognized the effectiveness of raw cabbage juice in normalizing gastric and intestinal function. Glutamine and methionine derivatives present in this juice are believed to be the active principles. Specific attention has focused on methionine S-methylsulfonium (MMS) in the chlorinated form. MMS occurs in a variety of fruits and vegetables, such as cabbage. Studies have demonstrated that MMS supports the normal healing process of the stomach following exposure to nonsteroidal anti-inflammatory agents (NSAIDs). Traditionally, this compound has been designated "Vitamin U", although it does not meet the classic definition of a vitamin.



Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Vitamin A (as natural mixed carotenoids and palmitate) (IU ratio 2.5:1)	3,500 IU	70%
Gamma Oryzanol (from rice)	100 mg	*
Chlorophyllins (from Mulberry leaf)	20 mg	*
Vitamin U Complex (DL-methylmethionine sulfonium chloride)	10 mg	*
Superoxide Dismutase (from vegetable culture †)	15 mcg	*
Catalase (from vegetable culture †)	15 mcg	*

* Daily Value not established

Other ingredients: Cellulose, modified cellulose gum, modified cellulose, silica and magnesium stearate (vegetable source).

† Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

This product is gluten and dairy free.

RECOMMENDATION: One (1) tablet three (3) times each day as a dietary supplement or as otherwise directed by a healthcare professional.

Active Ingredients:

Vitamin A (as natural mixed carotenoids and palmitate), Gamma Oryzanol (from rice), Chlorophyllins (from Mulberry leaf), Vitamin U Complex (as DL-Methionine methylsulfonium chloride), Superoxide Dismutase (from vegetable culture†), Catalase (from vegetable culture†). †Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.



IPS®

Product Number: 6415 (90C)

IPS® is a comprehensive Intestinal Permeability Support supplement, consisting of a proprietary blend of botanical compounds and amino acids, along with other synergistic constituents. It provides support for healthy gut function, specifically as it relates to permeability and intestinal mucosa integrity. It includes L-Glutamine, which is the preferred fuel for intestinal tissues, promoting repair and intestinal healing. L-Glutamine has also been demonstrated to be a functional component in the repair of ulcers, as well as a contributor to the healing of leaky gut conditions. When the intestinal epithelium becomes injured or compromised, chronic health disturbances may result. IPS® is a unique formula designed to address the specific issue of altered intestinal permeability. It supplies a comprehensive array of nutritional factors to support healthy intestinal function.



Supplement Facts

Serving Size: 1 Capsule

	Amount Per Serving
Proprietary Blend	600 mg
Jerusalem Artichoke (<i>Helianthus tuberosus</i>) (tuber)	*
L-Glutamine	*
Spanish Moss (<i>Tillandsia usneoides</i>) (whole)	*
Lamb Intestine Concentrate	*
Glucosamine Sulfate (from shrimp & crab shell)	*
Gamma Oryzanol (from rice)	*
L-Glutathione (reduced)	*
Cellulase	*

* Daily Value not established

Other ingredients: Capsule shell (gelatin and water) and magnesium stearate (vegetable source).

Substance with hair-like appearance is actually Spanish moss fibers.

This product is gluten and dairy free.

RECOMMENDATION: One (1) capsule three (3) times each day as a dietary supplement or as otherwise directed by a healthcare professional.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area.
Sealed with an imprinted safety seal for your protection.

Product # 6415 Rev. 05/13

Active Ingredients:

Proprietary Blend including Jerusalem Artichoke (*Helianthus tuberosus*) (tuber), L-Glutamine, Spanish Moss (*Tillandsia usneoides*) (whole), Lamb Intestine Concentrate, Glucosamine Sulfate (from shrimp & crab shell), Gamma Oryzanol (from rice), L-Glutathione (reduced), and Cellulase. Note: Substance with hair-like appearance is actually Spanish moss fibers.



L-Glutamine Powder™

Product Number: 5209 (500 g)

L-Glutamine is the most abundant amino acid in the body. Although the body manufactures glutamine during times of extreme stress (such as after very heavy exercise or an injury), in certain circumstances the body may need more glutamine than it can make. Most glutamine is stored in the muscles, followed by the lungs, where much of the glutamine is made. According to the University of Maryland Medical Center (<https://umm.edu.com>), glutamine functions as an important compound in removing excess ammonia (a common waste product in the body). It also assists in immune system functions, and appears to be needed for normal brain function and digestion. Glutamine helps to protect the gastrointestinal mucosa, and is a major fuel for enterocytes. It also supports tissues in the body that rapidly turn over, such as intestinal cells (intestinal epithelium). High levels of cortisol during times of stress can lower the body's stores of glutamine.

L-Glutamine Powder™ supplies 3g of L-Glutamine per teaspoon, as a nonhydrolyzed, free-form L-Amino Acid.

Active Ingredients:

Glutamine (as L-Glutamine). L-Glutamine is a non-hydrolyzed, naturally produced, free-form L-Amino Acid. CERTIFIED PURE. Contains no additives of any kind.



Supplement Facts

Serving Size: 1 teaspoon (approx. 3 g)

Servings Per Container: 166

	Amount Per Serving	% Daily Value
Glutamine (as L-Glutamine)†	3 g	*

* Daily Value not established

Ingredients: L-Glutamine.

† Non-hydrolyzed, naturally produced, free-form L-Amino Acid

CERTIFIED PURE

Contains no additives of any kind

This product is gluten and dairy free.

RECOMMENDATION: One (1) teaspoon (approx. 3 g) each day as a dietary supplement or as otherwise directed by a healthcare professional.

Adjunct Products: Aqueous Zinc™, Bio-Ae-Mulsion®, Bio-D-Mulsion®, Immuno-gG®, NAC, and Whey Protein Isolate



BIOTICS RESEARCH CANADA

"The Best of Science and Nature"

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SHORT COMMUNICATION

Inhibition of Enteric Parasites by Emulsified Oil of Oregano *in vivo*

Mark Force, William S. Sparks and Robert A. Ronzio*

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Oil of Mediterranean oregano *Oreganum vulgare* was orally administered to 14 adult patients whose stools tested positive for enteric parasites, *Blastocystis hominis*, *Entamoeba hartmanni* and *Endolimax nana*. After 6 weeks of supplementation with 600 mg emulsified oil of oregano daily, there was complete disappearance of *Entamoeba hartmanni* (four cases), *Endolimax nana* (one case), and *Blastocystis hominis* in eight cases. Also, *Blastocystis hominis* scores declined in three additional cases. Gastrointestinal symptoms improved in seven of the 11 patients who had tested positive for *Blastocystis hominis*. Copyright © 2000 John Wiley & Sons, Ltd.

Keywords: oregano; essential oil; *Blastocystis hominis*; enteric parasites; *Endolimax nana*; *Entamoeba hartmanni*.

INTRODUCTION

There is continued interest in botanical alternatives to the drugs commonly used to treat enteric parasites. Essential oils of culinary herbs and spices may offer a different avenue for treating protozoal overgrowth. In this context, the oil of Mediterranean oregano, *Oreganum vulgare*, is of particular interest. This aromatic oil has been shown to inhibit the growth of several pathogenic bacteria and yeast (Belaiche, 1979) Kivanc and Akgul, 1986). Orally administered oil of oregano ingestion was found to eradicate common fowl parasites in infected chickens and pheasants (Ninkov, 1996). Therefore, the present study was designed to examine the effects of oil of oregano in symptomatic patients with enteric parasites.

MATERIALS AND METHODS

Thirty-three adult patients with chronic gastrointestinal complaints and fatigue submitted two purged faecal specimens, which were analysed by a clinical laboratory (Diagnostic and Educational Laboratory—Institute of Parasitic Diseases, Phoenix, Arizona). Parasites per high power field (400X) were counted. The scores were based on the means of four to six fields (nil for no parasites detected; +1 for 1–5 parasites; +2 for 6–10; +3 for 11–15; and +4 for >15). In addition, the patients completed a symptom and risk assessment questionnaire. After obtaining informed consent for the protocol, approved by a Review Board, patients with enteric parasites were supplemented with a preparation of emulsified oil of oregano (A.D.P. from Biotics Research Corporation, Rosenberg, Texas 77471). Fourteen patients (four men,

10 women, ages 24–56) with parasites were administered four tablets providing 200 mg of emulsified oil t.i.d. with meals. No other dietary changes or therapeutic interventions were employed. After 6 weeks of supplementation, patients submitted a second set of purged stool specimens for parasite analysis, and they completed a follow-up questionnaire. Statistical analysis of parasite scores employed the sign test.

RESULTS

Thirty-three patients with gastrointestinal complaints who reported one or more of the following factors which could increase the risk of parasitic infections: recent foreign travel, exposure to small children in daycare, out-of-doors lifestyles and camping, lowered immunity, ownership of household pets, use of untreated well water, and consumption of uncooked salad greens, were selected for this study. Parasites were detected in stool specimens from 14 of these patients. As summarized by Table 1, eight patients initially tested positive for *Blastocystis hominis*; *Entamoeba hartmanni* was detected in another four patients; and one patient had *Endolimax nana*.

Thirteen of the 14 patients with parasites completed the supplementation protocol and submitted follow-up stool specimens. Parasites could no longer be detected in 10 patients (77%), including those who initially tested positive for *Entamoeba hartmanni*, *Endolimax nana* and *Blastocystis hominis* with scores <2+ (Table 1). In addition, parasite scores decreased for another three subjects (23%) with *Blastocystis hominis*, though the parasite was still detectable by the end of the study. The likelihood of obtaining decreased parasite scores for 13 of 14 individuals by chance was highly improbable ($p < 0.0006$). Commensurate with the reduction in parasite scores after supplementation with oil of oregano,

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Table I. Summary of faecal parasite scores, pre- and post-treatment with emulsified oil of oregano

Parasite detected	Number of patients	Parasite score	
		Before	Post-treatment
<i>Blastocystis hominis</i>	5	1	nil
	2	2	1
	1	4	2
<i>Entamoeba hartmanni</i>	4	1	nil
<i>Endomalix nana</i>	1	2	nil
Total	13	10	3 $p < 0.0006$

seven of the patients who initially tested positive for *Blastocystis hominis* reported amelioration of symptoms, including bloating, GI cramping, alternating diarrhoea and constipation and fatigue.

DISCUSSION

To the best of our knowledge, this is the first report of antiparasitic effects of oil of oregano in humans. Whether the improvement of symptoms in response to oregano oil was due to the inhibition of undetected microorganisms or to the elimination of parasites cannot be differentiated by this study. A variety of studies and case reports have reported *Blastocystis hominis* in faecal specimens of patients with gastrointestinal symptoms (Carbajal *et al.*, 1997; Shlim *et al.*, 1995). However, this observation may

reflect an association, rather than a causative agent. It should be noted that the prevalence of this parasite can be high, ranging from 9.5% to 18% among clinic stool specimens (Zuckerman *et al.*, 1990).

In considering the oral use of oil of oregano, an effective delivery is an important consideration. Exposure of gastrointestinal mucosa to concentrated (non-emulsified) essential oils can cause localized irritation, especially with prolonged usage. Emulsification of oil of oregano yielded stable particles with an average diameter of 0.5 μm .

This process increases the surface area by about six orders of magnitude, thus the total surface area of an emulsion generated from 200 mg (four drops of oil) would theoretically equal the total luminal surface of the small intestine (an estimated 200 m^2). The clinical significance of *Blastocystis hominis* remains controversial. Case reports of the amelioration of gastrointestinal symptoms and systemic complaints upon eradication of *Blastocystis hominis*, *Endolimax nana* and *Entamoeba hartmanni* suggested these organisms may act as weak pathogens in susceptible individuals (Burnstein and Liakos, 1983; Schirmer *et al.*, 1998). The effect of emulsified oil of oregano on well-established enteric pathogens, such as *Entamoeba histolytica* and *Giardia lamblia*, warrants further study.

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