

# Oil of Oregano

Supports intestinal cleansing†



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This information is provided as a medical and scientific educational resource for the use of physicians and other licensed health-care practitioners ("Practitioners"). This information is intended for Practitioners to use as a basis for determining whether to recommend these products to their patients. All recommendations regarding protocols, dosing, prescribing, and/or usage instructions should be tailored to the individual needs of the patient considering their medical history and concomitant therapies. This information is not intended for use by consumers.

Designs for Health's Oil of Oregano is an herbal extract that supports gastrointestinal health and healthy microbial environments.\* This product contains 60 mg of oregano oil (*Origanum vulgare*) standardized to the active ingredients of carvacrol and thymol. Oil of Oregano promotes healthy inflammatory and antioxidant responses.\* Due to its ability to support intestinal cleansing, this formula may be clinically beneficial to individuals with imbalanced microbial environments or certain gastrointestinal conditions.\*

## Formula Highlights

- Provides 60 mg of oregano oil (*Origanum vulgare*) (leaf) standardized to 36 mg of the bioactive ingredients of carvacrol and thymol from 60% to 75% of carvacrol oregano oil
- Gluten-free, dairy-free, and soy-free
- Non-GMO

**Oil of Oregano (*Origanum vulgare*)** is an herbal extract that promotes healthy microbial environments and healthy antioxidant and anti-inflammatory responses, as seen in animal models and in vitro studies.<sup>1-3</sup> Similar to common herbs and spices, oregano is a familiar culinary ingredient that may be clinically beneficial when its active ingredients are isolated and provided in concentrated amounts. The oil extracts of Mediterranean oregano (*Origanum vulgare*) and other varieties have a history in botanical medicine for promoting a healthy microbial environment in the gastrointestinal tract.<sup>3-5</sup>

## Supports Healthy Microbial Environments\*

The main phenolic compounds in oregano are monoterpenes — carvacrol [2-methyl-5-(1-methylethyl)phenol] and thymol (2-isopropyl-5methylphenol). Carvacrol and thymol in *Origanum vulgare* have been shown to support healthy microbial environments, including potentially attenuating the proliferation of pathogenic bacteria.<sup>2,6,7</sup> In vitro and in swine models have been shown to be biocidal against numerous Gram-positive and Gram-negative bacteria, including *Listeria*, *Salmonella*, *Pseudomonas*, *Helicobacter pylori*, and *Escherichia coli* (*E. coli*) in the jejunum, ileum, and colon.<sup>3,8-10</sup> In vitro studies demonstrate that *Origanum vulgare* may attenuate the growth of biofilms produced by various species of *Staphylococcus*, *Streptococcus*, *E. coli*, and *Salmonella*.<sup>11-15</sup> These in vitro studies show that the biofilm was reduced in direct proportion to the amount of oregano extracts.<sup>12</sup> It is understood that oil of oregano may inhibit bacterial strains through enzyme inhibition, efflux pump inhibition, adenosine triphosphate depletion, and cytoplasmic membrane damage, as seen in vitro and in vivo.<sup>16</sup>

In vitro and in mouse models, the antimicrobial properties of oil of oregano attenuated the proliferation of four strains of methicillin-resistant *Staphylococci aureus* (MRSA). MRSA and other antibiotic-resistant organisms may be associated with nosocomial infection and infections through sub-sanitary conditions in everyday encounters, such as at gyms.<sup>13</sup> Additionally, in vitro, oil of oregano attenuated the proliferation of the multi-drug resistant *E. coli*, which is a common cause of urinary tract infections and is implicated in gastrointestinal conditions.<sup>17</sup>

In vitro, *Origanum vulgare* displays antibacterial properties to *Klebsiella pneumoniae* (often associated with pressure ulcers), *Aggregatibacter actinomycetemcomitans* (often associated with periodontal disease), and opportunistic pathogens associated with respiratory infections in cystic fibrosis patients.<sup>18-20</sup> Furthermore, in vitro studies support the efficacy of oil of oregano against multiple strains of *Clostridium perfringens*, *Pseudomonas aeruginosa*, and *Staphylococcus aureus*.<sup>7,21</sup>

According to a clinical study of 106 patients, oil of oregano may be clinically relevant to patients with metabolic syndrome (MetS) with minor infections with *Staphylococcus aureus*, *Streptococcus pyogenes*, and *Escherichia coli*. Compared to patients treated with antibiotics, the patients that received oil of oregano displayed antibacterial effects without promoting MetS-specific dysbiosis, such as diarrhea, gastrointestinal (GI) pain, and flatulence.<sup>22</sup>

The antifungal properties of *Origanum vulgare* and its two primary constituents have been shown in vitro and in vivo. A commonly proposed mechanism by which carvacrol and thymol exert their antifungal effects is by binding to sterols of the fungal membrane; this may damage its integrity and function and lead to fungal death.<sup>23</sup>

## Benefits\*

- Supports gastrointestinal health
- Supports healthy microbial balance
- Promotes healthy inflammatory and antioxidant responses

## Supplement Facts

Serving Size 1 softgel

| Amount Per Serving                                                                                                | % Daily Value |
|-------------------------------------------------------------------------------------------------------------------|---------------|
| Oregano Oil<br>( <i>Origanum vulgare</i> )(leaf)(36 mg carvacrol and<br>thymol from 60-75% carvacrol oregano oil) | 60 mg *       |

\*Daily Value not established.

**Other Ingredients:** Olive oil, bovine gelatin, vegetable glycerine, purified water.

In vitro studies have shown that oil of oregano attenuated the proliferation of various morphological forms of *Candida albicans*, a common fungal infection of the mouth, GI tract, and vagina.<sup>6,24,25</sup> Carvacrol has been found in vitro to be among the most efficacious monoterpenes against *Candida albicans* and may impede the growth of the yeast itself, its hyphae, and the biofilm.<sup>6</sup> Carvacrol may also exhibit antifungal properties by altering endoplasmic reticulum integrity and stress in *Candida albicans* fungus.<sup>6</sup>

In vitro studies, both carvacrol and thymol showed inhibitory actions against fluconazole-resistant *Candida albicans*.<sup>24</sup> Researchers concluded that the antifungal properties of *Origanum vulgare* may synergistically promote the efficacy of traditional antifungal agents when taken together.<sup>25</sup>

Further research is needed on this subject. However, in vitro studies suggest that *Origanum vulgare* exhibits anti-parasitic activity and inhibits the growth and proliferation of endoparasites, such as *Toxoplasma gondii*.<sup>26,27</sup> A small study investigated 13 patients with three different intestinal parasites and complaints of GI distress and fatigue. After 6 weeks of supplementation with 600 mg oil of oregano (200 mg TID), 10 patients experienced complete eradication of parasites and ameliorated bloating, cramping, fatigue, and alternating diarrhea and constipation. This result was obtained with no dietary or lifestyle modifications.<sup>28</sup> In vitro studies have shown oil of oregano may attenuate common gastrointestinal parasites, including *Cryptosporidium parvum* and *Anisakis simplex*.<sup>29,30</sup> The antiparasitic properties of *Origanum vulgare* are proposed to be similar to those observed in antibacterial studies, including the disruption of parasitic cell membranes that may lead to inducing apoptosis and necrosis of cells.<sup>29</sup>

#### **Supports Healthy Antioxidant and Anti-Inflammatory Responses\***

Beyond promoting healthy microbial environments, in vitro studies and animal models reveal that *Origanum vulgare* promotes healthy inflammatory and antioxidant responses — dual factors that promote overall health and may help attenuate many ongoing health conditions.<sup>5,7,21</sup> In vitro studies show synergism between carvacrol, thymol, and other terpenes in oil of oregano that may promote increased free radical scavenging capacity and protection of cellular membranes, lipids, and intracellular components from the damaging effects of oxidative stress. Not only does oregano oil reduce reactive oxygen species by scavenging, but it has been shown to modulate inflammation by reducing the production of tumor necrosis factor-alpha, interleukin-1 $\beta$  (IL-1 $\beta$ ), and IL-6 in lipopolysaccharide-activated THP-1 human macrophage cells. Other inflammatory biomarkers such as monocyte chemoattractant protein-1, the vascular cell adhesion molecule-1, and the intracellular cell adhesion molecule-1 have been significantly reduced by oregano oil in human neonatal fibroblasts. Mice models administered oil or oregano supplementation exhibited a reduction in interleukins, prostaglandins, and cyclooxygenase-2.<sup>5</sup>

**Recommended Use:** Take 1 softgel per day with a meal or as directed by your health-care practitioner.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference--oil-of-oregano-tech-sheet-references>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Healthcare practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage.

**\*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.**

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