

# Oregano Oil



## Clinical Applications

- May be Effective Against Intestinal Parasites\*
- May Help Prevent Yeast Overgrowth\*
- May Help Fungal and Bacterial Infections\*
- Contains Anti-Aging Properties\*
- May be Effective Against Drug-Resistant Microbes, Oxidative Stress, and Inflammation\*

*Oregano Oil is a powerful plant extract with highly effective antimicrobial properties, as well as important antioxidant and intestinal cleansing benefits. Like rosemary, garlic, ginger, turmeric, and other common herbs and spices, oregano is a familiar culinary ingredient whose potential pharmacologic role can be exploited when its essential components are isolated and provided in concentrated doses.*

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## Discussion

The oil extracts of Mediterranean oregano (*Origanum vulgare*) and other varieties have a history in botanical medicine for efficacy in the gastrointestinal tract as antimicrobial, antifungal, and antiparasitic agents.

**Antimicrobial** The principal phenolic compounds in oregano—carvacrol [2-methyl-5-(1-methylethyl)phenol] and thymol (2-isopropyl-5methylphenol)—are well known for their individual antibacterial properties, but when synergistically functioning alongside the other biologically active monoterpenes of oregano, these compounds convey potent antimicrobial actions. They have both been shown to be biocidal against numerous Gram-positive and Gram-negative bacteria including *Listeria*, *Salmonella*, *Pseudomonas*, *H. pylori*, and *E. coli* in the jejunum, ileum, and colon.<sup>4,5,9,10</sup> In vitro studies showed oil of oregano to be highly effective in dismantling and attenuating the growth of biofilms produced by various species of *Staphylococcus*, *Streptococcus*, *E. coli*, and *Salmonella*.<sup>11-15</sup> The researchers proposed that the hydrophobic properties of carvacrol and thymol enabled them to interact with the lipid bilayer of bacterial cell membranes, "causing loss of integrity and leakage of cellular material such as ions, ATP and nucleic acids."<sup>11</sup> In the presence of these compounds, bacterial cells grew as looser colonies and the amount of biofilm was reduced in direct proportion to the dose of oregano extracts.<sup>12</sup>

The activity of oil of oregano at the subcellular level is confirmed by studies that demonstrated disruption of the cell membranes and intracellular structures, damage of cytoplasmic vacuoles, disturbance of membrane embedded proteins, lipids, RNA synthesis, ATPase activity, and an imbalance of intracellular osmotic pressure as cytoplasmic contents have leaked in *Staph* and *Pseudomonas* organisms exposed to oregano oil.<sup>4</sup> Other studies support the efficacy of oil of oregano against multiple strains of *Staph*, showing oregano to be the most powerful antimicrobial when compared to several other essential oils, including rosemary, basil, and mint.<sup>17</sup> The carvacrol content of the oregano tested was 43.6%, compared to 78.9% for lavender. However, despite the lower carvacrol content, oregano was a far more effective antibacterial than lavender, suggesting a synergistic role for oregano's other chemical constituents. The antimicrobial properties of oregano's principal compounds have proven effective, even against four strains of methicillin-resistant staphylococci—a key finding, with MRSA and other antibiotic-resistant organisms being a major cause of nosocomial infection as well as infection via sub-sanitary conditions in everyday encounters, such as at gyms.<sup>13</sup> Additionally, oil of oregano was shown to be effective against multi-drug resistant *E. coli* - a common cause of urinary tract infections and implicated in gastrointestinal conditions.<sup>16</sup>

**Antiparasitic** Oregano oil has been shown to be a powerful antiparasitic. A small study involving <sup>13</sup> patients with three different intestinal parasites and complaints of GI distress and fatigue resulted in the complete eradication of parasites in 10 patients, along with amelioration of bloating, cramping, fatigue, and alternating diarrhea and constipation after 6 weeks of supplementation with 600 mg oil of oregano (200 mg t.i.d.). This powerful result was obtained with no other dietary or lifestyle modifications.<sup>24</sup> In vitro studies have shown Mexican oregano to be effective against common gastrointestinal parasites and nematodes including *Cryptosporidium parvum* and *Anisakis simplex*.<sup>25, 26</sup> The mechanisms of action were like those observed in antibacterial studies, including the disruption of cell membranes leading to changes in osmotic balance.

**Antioxidant & Anti-inflammatory** Aside from being an effective antimicrobial agent, clinical studies are also revealing oregano oil is a powerful modulator of both oxidative stress and inflammation – a dual cause of many chronic health conditions. For example, in vitro studies show synergism between carvacrol, thymol, and other terpenes in oregano oil that create a high free radical scavenging capacity and protects 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 (TNF- $\alpha$ ), interleukin-1 $\beta$  (IL-1 $\beta$ ) and IL-6 in LPS-activated THP-1 human macrophage cells. Other inflammatory biomarkers such as monocyte chemoattractant protein-1 (MCP-1), the vascular cell adhesion molecule-1 (VCAM-1) and the intracellular cell adhesion molecule-1 (ICAM-1) have been significantly reduced by oregano oil in human neonatal fibroblasts. Mice models have shown a reduction in interleukins, prostaglandins, and cyclooxygenase-2 (COX-2).<sup>27</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.

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# Oregano Oil



# Supplement Facts

Serving Size 1 softgel

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

\*Daily Value not established.

**Other Ingredients:** Olive oil, bovine gelatin, vegetable glycerine, purified water. ORG060-8

## Directions

Take one softgel per day, with a meal, or as directed by your healthcare provider.

Consult your healthcare provider prior to use. Individuals taking blood thinners or other medication should discuss potential interactions with their healthcare practitioner. Do not use if tamper seal is damaged.



## References

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