

Microcidin® AF



Low FODMAP Anti-Microbial Formula

Key Features:

- Allium-free formula (**low-FODMAP compatible**) for individuals intolerant to garlic.
- **Berberine** has been shown to **improve IBS** symptoms (abdominal pain, stool frequency & urgency), as well as **anxiety and depression** in patients with IBS-D.
- **Cinnamon** - “warming” antimicrobial to **prevent loose stool** from the “cooling” property of berberine.
- Synergized with concentrated **Thyme** and **Oregano** extracts for **spasmolytic, carminitive, and broad spectrum antimicrobial** effect in the GI tract.
- **Neem** and **Uva Ursi** extract are **potent antimicrobials, anti-biofilm**, and provide additional **gastroprotective** and **antiulcer** effects.

Indication:

- Small intestine bacterial or fungal overgrowth (SIBO or SIFO), Dysbiosis, Candidiasis
- H. pylori-induced gastritis, peptic ulcer disease (PUD)
- Gastroenteritis, food poisoning (prevention and treatment)
- Irritable Bowel Syndrome (IBS)
- Upper Respiratory Tract Infections (URTI), Cold/Flu

Description:

Microcidin® AF is a **low-FODMAP “Allium-Free”** broad spectrum antimicrobial formula that targets multiple mechanisms to inhibit and eradicate pathogenic bacteria, fungi and parasites in the gut.

Berberine has been used clinically to **relieve diarrhea caused by gastrointestinal infections**, as well as **diarrhea-type irritable bowel syndrome (IBS-D)**. It is well-known to have antimicrobial, antioxidants, anti-acetylcholinesterase, anti-diabetic and anticancer effects.^[1]

In an RCT involving patients with acute diarrhea caused by enterotoxigenic *Escherichia coli* (ETEC), a single dose of 400 mg of berberine sulfate* significantly reduced the stool volume in 8 hours, and stopped the diarrhea within 24 hours compared to controls.^[2]

In another RCT on patients with diarrhea-dominant IBS (n=196), 400 mg of berberine hydrochloride* was given twice daily for 8 weeks. Significant improvements in diarrhea frequency (p=0.032), abdominal pain frequency (p<0.01) and urgent need for defecation frequency (p<0.01) were observed in the berberine group compared to placebo.^[3]

Quantity: 112 Vegetarian Capsules

Ingredients (per capsules):

Berberine Hydrochloride.....	250 mg
Thyme Extract (20:1) (<i>Thymus vulgaris</i>).....	35 mg (leaf) (equivalent to 700 mg dried herb)
Cinnamon Extract (10:1) (<i>Cinnamomum aromaticum</i>).....	40 mg (bark) (equivalent to 400 mg dried herb)
Neem Extract (20:1) (<i>Azadirachta indica</i>).....	35 mg (leaf) (equivalent to 700 mg dried herb)
Uva Ursi Extract (10:1) (<i>Arctostaphylos uva-ursi</i>).....	35 mg (leaf) (equivalent to 350 mg dried herb)
Oregano Extract (5:1) (<i>Origanum vulgare</i>).....	50 mg (leaf) (30% carvacrol) (equivalent to 375 mg dried herb)

Non-medicinal Ingredients:

L-leucine, silicon dioxide, pullulan/ hypromellose (capsule)

Suggested Use:

Adults - Take 2 capsules with food, 2 times per day, or as directed by a health care practitioner. May increase the dosing to **3 times per day with food for SIBO Eradication**.

Berberine is well tolerated in clinical trials, with minor and transient gastrointestinal adverse events (mostly nausea) in the first 4 weeks with 1500 mg of berberine hydrochloride.^[4]

*Berberine sulfate contains 87.5% berberine; berberine hydrochloride contains 90.5% berberine.

Thyme is a culinary herb traditionally used to help relieve **upper respiratory tract illness** (anti-catarrh, spasmolytic), and **flatulent dyspepsia and colic** (carminative).^[5] The active constituents are phenol and flavonoids compounds, such as **thymol**, geraniol, thujanol and linalool.^[6] Thyme possesses remarkable anti-biofilm, anti-adhesive and bactericidal properties^[7,8], as well as strong antimicrobial activity against clinical multidrug-resistant strains of *Staphylococcus*, *Enterococcus*, *Escherichia*, *Pseudomonas* genus^[9], antifungal, and antiherpetic properties.^[10]

Cinnamon is known to have multiple therapeutic actions involving **astringent, antimicrobial, carminative**, lipid-lowering, antioxidant/anti-inflammatory, insulin-sensitizing, astringent and anti-clotting properties.^[11]

In Traditional Chinese Medicine, cinnamon is considered “warming” and could protect the Spleen and reduced incidence of loose stool from the “cooling” property of berberine.^[15]



Study found two constituents of cinnamon, **eugenol** and **cinnamic acid**, have potent antioxidant activity and anti-inflammatory effect on *H. pylori*-induced gastritis in vitro and are **protective against gastric damage in vivo through stimulation of mucus secretion**.^[12] Recent studies have also demonstrated the anti-*Candida* and anti-biofilm efficacy of cinnamon^[13], as well as its antiviral activity against influenza A virus.^[14]

Oregano has been shown to exert cytotoxic, antioxidant, and antibacterial activities, which mostly attributed to **carvacrol** and **thymol**.^[16] It has been shown bacteriocidal and bacteriostatic to some clinically significant pathogens such as *Pseudomonas aeruginosa*, *E. coli*, *Acinetobacter baumannii*, *Candida albicans* and *S. aureus* (including MRSA).

Uva Ursi is traditionally used as antimicrobial/mild diuretic in UTI. It has also been demonstrated in vitro to have **anti-*S. aureus*** activity^[17], as well as **strongest direct growth-inhibitory** and **anti-quorum sensing (bacterial cell-to-cell communication systems)** against *Chromobacterium violaceum* and *Pseudomonas aeruginosa*, among seven selected medicinal plants.^[18] **Arbutin** is thought to be the main constituents for antimicrobial effect. Moreover, arbutin has been demonstrated to have **anti-ulcer/gastro-protective activity**, making it a potential application in gastrointestinal conditions.^[19]

Neem (Azadirachta indica) has been traditionally used in Chinese, Ayurvedic and Unani medicines worldwide for various diseases.^[20] Constituents such as **polyphenols**, **quercetin** and **beta-sitosterol** were identified to have antifungal and antibacterial activities through growth inhibition and cell wall breakdown. Studies also found neem has properties **against biofilm formation of MRSA and *P. aeruginosa***^[21, 22], as well as **potent gastroprotective and antiulcer effects**.

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