

Bio.Clear™ Microbia GI

A botanical blend to support microbial balance

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Bio.Clear™ Microbia GI is a botanical formulation designed to rebalance a dysbiotic microbiome. The botanicals have been chosen for their historic use as anti-microbials, but also because of the in-vitro evidence for restricting the growth of certain pathogenic bacteria, fungi and viruses.

Bio.Clear™ Microbia GI is designed to be used in short-term plans to help redress an imbalance in one, or multiple, microbiomes. Botanicals do not possess the same ability to induce antibiotic resistance, or impact too strongly on microbial diversity, so they can be a more ecosystem-friendly way of working with minor infections that do not require antibiotic treatment. Bio.Clear™ Microbia GI should always be followed up with support for the microbiome, such as prebiotics and polyphenols to help encourage healthy biodiversity.

Botanicals

Wormwood – *Artemisia absinthium*

Wormwood has traditionally been used as an anthelmintic (anti-worm), anti-microbial and anti-parasitic. Wormwood contains many active phytochemicals, such as absinthin, anabsin, artemisinin, anabsinthin, artabsin, matricin and thujone. One of the active constituents – artemisinin – gained recognition with the Nobel prize in 2015 for its ability to be used to treat malaria⁽¹⁾.

In-vitro and murine models have shown wormwood to be effective against tapeworm (*Hymenolepis nana*), *plasmodium* (malaria), *Trypanosoma brucei brucei*, *leishmansia* and other parasites⁽²⁻⁴⁾.

Wormwood has also been shown to reduce tumour necrosis factor-alpha (TNF-α) and interleukins. Wormwood improved the remission rates of Crohn's disease in a small placebo-controlled human clinical trial. The protocol of 3 x 750mg tablets of powdered wormwood for 6 weeks alongside conventional treatment saw remission of 8 (of 10) patients in the treatment group, compared to just 2 in the control group. Additionally, a significant decrease in serum TNF-α levels was observed in the treatment group, compared to the control⁽⁵⁾.

Nutritional Information	
Actives	Per Dose 2 capsules
Artemisia Extract 4:1 (<i>Artemisia absinthium</i> L.)	300 mg
Caprylic Acid (192 mg caprylate - 80% CA)	240 mg
Pau D'Arco Extract 4:1 (<i>Tabebuia avellanadae</i>)	200 mg
Thyme Extract 4:1	200 mg
Barberry Bark Extract 10:1 (<i>Berberis vulgaris</i> L.)	125 mg
Clove powder (<i>Syzygium Aromaticum</i>)	120 mg
Sage Extract 5:1	100 mg
Myrrh extract 4:1	75 mg
Other Ingredients: Capsule Shell: Hydroxypropyl Methylcellulose, Anti-caking agent: Organic Spirulina	

GMO free, suitable for vegetarians

Directions:

Take 2 capsules daily.

Do not exceed the recommended dose, unless advised by your healthcare professional.

Warning: Do not use during pregnancy or while breast-

Pau d'Arco – *Tabebuia avellanadae*

Pau d'Arco is a native tree to Brazil. The bark has been used traditionally for its anti-microbial, anti-fungal and immune-enhancing properties. The active constituent in Pau d'Arco is lapachol, which has been shown to be effective against Leishmania, an intra-cellular parasite⁽⁶⁾. An in-vitro investigation of the anti-microbial effects, showed that at relatively low doses, it was effective against *Clostridium paraputrificum*, *Clostridium perfringens* and *Escherichia coli*, without impacting colonies of *Lactobacilli* and *Bifidobacterium*⁽⁷⁾. The immune-enhancing properties optimise the host's endogenous mechanisms for readdressing microbial balance.

Myrrh – *Commiphora myrrha*

Myrrh is a resin collected from the tree *commiphora molmol*, with a long-standing recorded history of use, even in biblical texts. It is traditionally used as an antiseptic and an anti-viral; however, more recent research shows it has anti-parasitic and anthelmintic properties too.

In-vitro and animal studies show myrrh to be effective against *Giardia lamblia*⁽⁶⁾.

Oral use of myrrh extract (600 mg/day for 6 to 8 days) was evaluated in 13 women with metronidazole-resistant *Trichomonas vaginalis* in an open label trial. Successful treatment occurred in 11 patients⁽⁹⁾.

In a human clinical trial, women with chronic urinary tract infections were treated with a combination of *Commiphora myrrha* and Hibiscus extract with vegetable proteases in a cycle of 1 tablet in the morning and 1 tablet in the evening for 7 days, followed by 1 tablet in the evening for 10 days (1 cycle each month, for 6 months). The treatment reduced the frequency of UTI's and most women tested negative to bacteria in the urine at the end of treatment⁽¹⁰⁾.

Barberry – *Berberis vulgaris*

Barberry is traditionally used as an anti-microbial, anti-parasitic, anti-diarrhoeal and to increase bile flow. The actions of Berberis are thought to be due to the presence of the isoquinoline alkaloids, in particular berberine. In China, berberine has been widely used for treating gastroenteritis and diarrhoea.

In-vitro evidence has shown Berberis to be effective against fluconazole-resistant *Candida* and *Cryptococcus neoformans* fungal strains⁽¹¹⁾. It increased Akkermansia species in murine models⁽¹²⁾ and improved gap junctions, especially in cases of polymicrobial sepsis^(13,14).

Berberine has been shown to possess anti-microbial effects against cholera, Salmonella, Shigella, Giardia, Enterotoxigenic *E. coli*, as well as other fungi, viruses, and chlamydia⁽¹⁵⁾. Berberine was administered to 132 patients with diarrhoea-predominant irritable bowel syndrome in a randomised double-blind placebo-controlled clinical trial (800 mg/day for 8 weeks). The berberine treatment group saw a reduction in pain and frequency of diarrhoea, urgency of defecation, and improved depression and anxiety scores⁽¹⁶⁾.

In human clinical trials, berberine has successfully been used alongside conventional *Helicobacter pylori* treatment, and also alongside conventional malarial treatment, in both cases, berberine improved the outcomes of treatment⁽¹⁷⁾.

Sage – *Salvia officinalis*

Sage is traditionally used as an anti-viral, anti-bacterial, anti-microbial and anti-fungal, amongst other uses. Sage has often been used as remedy for sore throats or poor oral hygiene, and research has shown its effectiveness against species of gram-positive Streptococci, some of which are responsible for tonsillitis and oral cavities⁽¹⁸⁾.

Sage is effective against many gram-positive pathogens such as *Bacillus cereus*, *Bacillus megaterium*, *Bacillus subtilis*, *Enterococcus faecalis*, *Listeria monocytogenes*, and *Staphylococcus epidermidis*. Additionally, the essential oil of *S. officinalis* shows significant inhibitory effects on gram-negative bacteria growth, including *Aeromonashydrophila*, *Aeromonassobria*, *E. coli*, *Klebsiella oxytoca*, *Klebsiella pneumonia*, *Morganella morganii*, *Salmonella anatum*, *Salmonella enteritidis*, *Salmonella typhi*, and *Shigellasonnei*. Anti-fungal effects against *Botrytis cinerea*, *Candida glabrata*, *Candida albicans*, *Candida krusei*, and *Candida parapsilosis* have also been reported⁽¹⁹⁾.

Clove – *Syzygium aromaticum*

Clove is well known for its anaesthetic and anti-microbial activities in toothache. Clove has in-vitro evidence for inhibiting the growth of both gram-positive and gram-negative bacteria, and their biofilms⁽²⁰⁾. Clove used in a toothpaste was shown to increase the inhibition of oral pathogens⁽²¹⁾.

Caprylic acid

Caprylic acid is a medium chain fatty acid that is found in human breast milk, bovine milk and coconut oil. It is frequently used in foods to reduce the growth of pathogens such as Salmonella and *E. Coli* OH 157:H7^(22,23). In-vitro studies indicate it works well in combination with the herbal constituent thymol (from thyme) against *Candida albicans*, especially for breaking down biofilms⁽²⁴⁾. In-vitro evidence has also shown caprylic acid to be effective against opportunistic *Staphylococcus aureus*⁽²⁵⁾.

Dosage

2 tablets a day for 1–4 weeks at a time, dependant on need.

Can be titrated up to 1 capsule with each meal (3 capsules a day) or 2 capsules twice a day for a short period of up to 10 days.

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