NutraMedix

Nutra-BBS

Applications

- Microbial Support
- Antioxidant Support
- Healthy Inflammatory Response Support

Introduction

NutraMedix Nutra-BBS is a synergistic blend of hydro-ethanol extracts from **elecampane root** (*Inula helenium*), **jalap root** (*Ipomoea purga*), **blackberry leaf** (*R. fruticosus*), and **capirona bark** (*Calycophyllum spruceanum*). It is designed to assist with comprehensive microbial support, with additional antioxidant support and healthy inflammatory response support.*

Elecampane (*I. helenium*) belongs to the Asteraceae family.[1] The root includes volatile oils such as alantolactone, isoalantolactone, alantol, alpha- and beta-bergamotene, beta-pinene, and anethole; amino acids such as aspartic acid, serine, threonine, and glutamic acid; sterols such as stigmasterol and beta-sitosterol; and thymol derivatives.[2-4] Alantolactone and isoalantolactone are considered the main constituents.[3,5] The main phenolic compounds that may help with antioxidant support are the phenolic acids (caffeic, dicaffeoyl quinic, chlorogenic, and hydroxybenzoic), terpenes (alantolactone and isoalantolactone), and flavonoids (epicatechin, catechin gallate, dihydroquercetin pentosyl rutinoside, quercetin-3-0-beta-glucopyranoside, ferulic acid-4-0-glucoside, and kaempherol-7-0dipentoside).[6] The roots also include dietary fiber from fructooligosaccharides and inulin.[7] *I. helenium* root has been used in traditional Chinese health practices for gastrointestinal support, where it is known as *tu mu xiang*.*[3] *I. helenium* may help with microbial support, as determined by the agar-well diffusion method.*[8,9] It may also help with mycelial support.*[9]

Jalap (*Ipomoea purga*) belongs to the Convolvulaceae family. Synonyms for *I. purga* include *Ipomoea jalapa*, *Ipomoea schiedeana*, *Convolvulus officinalis*, *Convolvulus purga* and *Exogonium purga*.[10-12] *I. purga* is a climbing vine that is native to southern Mexico.[12] The root has been used in traditional health practices to support gastrointestinal regularity,[13] with other potential benefits under current investigation.*[14] Constituents of jalap root include convolvulin, jalapine, caffeic acid, scopoletin, valeric acid, starch, and tiglic acid.[14,15] Jalap root has a long history of traditional use for supporting gastrointestinal regularity and maintaining healthy peristalsis.*[10,13,14]

Blackberry (*R. fruticosus*) belongs to the Rosaceae family. Synonyms for *R. fruticosus* include *R. plicatus*, *R. affinis*, *R. canadensis*, *R. millspaughii*, and *R. laciniatus*.[16] *R. fruticosus* leaves have been traditionally used for microbial support.*[17] The leaves contain phenolic acids such as neo-chlorogenic acid, caffeic acid, gallic acid, p-coumaric acid, and ellagic acid; flavonols such as quercetin, quercetin-3-O-galactoside, quercetin-3-O-glucuronide, and kaempferol; flavan-3-ols such as catechin, epicatechin, and epicatechin gallate methyl gallate; ellagitannins such as sanguiin H-6/lambertianin C, and casuarinin; anthocyanins such as cyanidin-3-O-glucoside; and triterpene acids such as rubinic

acid and rubusic acid.[18,19] They also contain tannins, villosin, gallic acid, and iron.[17] Blackberry leaf (*R. fruticosus*) may help with microbial support,[20] antioxidant support,[19,21] healthy inflammatory response support,[19] neurological support,[22] and gastrointestinal support.*[23]

Capirona (*C. spruceanum*) belongs to the Rubiaceae family.[24] A synonym for this plant is *Eukylista spruceana*.[25] It is native to the Amazon rainforest and is sometimes called the "Tree of Youth."[26] It has been used in traditional health practices for healthy inflammatory response support.*[27] Constituents of capirona bark include seco-iridoids 6'-O-acetyldiderroside, 7-methoxydiderroside, 8-O-tigloyldiderroside, kingiside, secoxyloganin, and diderroside, as well as iridoids loganin and loganetin.[28] Other constituents include gardenoside, cyanidin, 5-hydroxymorin, 5-hydroxy-6-methoxycoumarin7-glucoside, and taxifolin.[26] Capirona bark may also help with antioxidant support.*[26,27]

NutraMedix Nutra-BBS is made at our U.S. manufacturing facility using a specialized proprietary extraction process that optimizes the constituents of the herbs in their original, unprocessed state to obtain broad-spectrum concentration. Because our extracts are made in our own facility, we control all aspects of quality, including stringent ID testing, microbial testing, and heavy metal testing. NutraMedix rigorously follows current good manufacturing practices (cGMP), as do our suppliers.

Microbial Support

Elecampane root (*I. helenium*) may help with microbial support, as determined by the agar-well diffusion method.*[8,9] It may also help with mycelial support.*[9] **Blackberry leaf** (*R. fruticosus*) may also help with microbial support. The most robust microbial support occurs with the hydro-alcoholic leaf extract, as quantified by a 6-11 mm zone of inhibition.*[20]

Antioxidant Support

Elecampane root (*I. helenium*) may help with antioxidant support, as determined by DPPH, phosphomolybdenum, beta-carotene bleaching, ABTS, FRAP, and CUPRAC assays.*[7,8] Flavonoids are found in all plant parts, and the relevant phenolic compounds, concentrated in the inflorescence, leaves, and root, are highly soluble in ethanol.*[29] The constituent alantolactone may help to support levels of quinone reductase, glutathione S-transferase (GST), and glutathione reductase already within the normal range, in a dose-dependent manner.*[30] Elecampane root's antioxidant support is attributed to effects on PI3K and JNK signaling pathways, with support of Nrf2 already within the normal range.*[30]

Blackberry leaf (*R. fruticosus*) is rich in phenolic content, as shown spectrophotometrically. The free radical scavenging capacity was determined via DPPH assay.*[21] The constituent cyanidin-3-O-glucoside may provide particularly robust antioxidant support.*[19] **Capirona bark** (*C. spruceanum*) may also help with antioxidant support, as quantified by DPPH, ABTS, singlet oxygen, superoxide anion radical, and beta-carotene bleaching methods.*[26,27] In vivo antioxidant support was seen in *Caenorhabditis elegans* (*C. elegans*).*[26]

Healthy Inflammatory Response Support

Elecampane root (*I. helenium*) may support a healthy inflammatory response, attributed to its sesquiterpene lactone isoalantolactone.*[31] In vitro research has shown that isoalantolactone may help maintain NF-kappa B already within the normal range.*[31] Alantolactone and isoalantolactone may help maintain levels of IgE, TNF-alpha, and IFN-gamma already within the normal range.*[32] They may also help maintain IL-4, IL-5 and IL-13 already within the normal range.*[32] Additionally, the sesquiterpene lactone igalan may help with healthy inflammatory support.*[33] **Blackberry leaf** (*R. fruticosus*) contains cyanidin-3-O-glucoside which may help with healthy inflammatory response support by way of TNF-alpha and COX-2 inhibition.*[19]

Safety and Cautions

Elecampane root (*Inula helenium*) is generally well tolerated.* Information on the adverse effects of elecampane root is limited. Elecampane root may cause allergic reactions in those with allergies to other plants in the Asteraceae family, such as ragweed.[34] Cases of contact dermatitis

have been reported, which may be attributed to the sesquiterpene lactones alantolactone and isoalantolactone.[35,36] Elecampane root may have additive effects with CNS depressants.[34] Large amounts of elecampane root may cause vomiting and diarrhea.[37]

Jalap root (*I. purga*) may cause purgative effects, which are contra-indicated in pregnancy.[38,39] It is also contraindicated in gastrointestinal inflammation or infection.[40] *I. purga* contains cathartic gluco-resins which may intensify peristalsis, increasing water elimination.[13,41] Consequently, it is contraindicated in those taking stimulant laxatives as it may have additive effects, leading to dehydration and electrolyte imbalance.[42] In addition, *I. purga* may have additive effects with diuretic-induced potassium loss.[42] Fluid and electrolyte imbalance may theoretically increase INR and risk of bleeding in those taking warfarin.[10] Electrolyte imbalance may also worsen the toxicity of cardiac glycosides.[43]

Blackberry leaf (*R. fruticosus*) is generally well tolerated. There is little information available on potential side effects. Insufficient data is available to determine the safety of blackberry leaf in pregnancy.[16]

Capirona bark (*C. spruceanum*) has shown no evidence of toxicity in mice, though information is otherwise limited.[44]

Safety is not documented in breastfeeding or pregnant women, or in children under age 3, due to insufficient safety research.

*This statement has not been evaluated by the Food and Drug Administration. This product is not intended to treat, cure, or prevent any diseases.

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NutraMedix.

SHAKE WELL BEFORE EACH USE.
Put 2 to 60 drops in 4 oz (120 mL) of water and wait one minute before drinking. Start with 2 drops (30 min before meals) increasing by 2 drops with each dose up to 60 drops, 2 times a day or as directed by physician. Do not use if pregnant or nursing. Stop use if adverse reactions develop. Keep out of reach of children.

†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.

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NUTRA-BBS

MICROBIAL SUPPORT†

Dietary Supplement

2 fl oz. (60 mL)

Supplement Facts

Serving Size 60 drops (3mL)
Servings Per Container 20

V346733

Amount Per Serving	
Proprietary Blend Elecampane root extract, Jalap root extract, Blackberry leaf extract, *Calycophyllum spruceanum* bark extract	3 mL*

*Daily Value not established

Other ingredients: mineral water, ethanol (20-24%)

NutraMedix.
Jupiter, Florida 33458 USA
www.nutramedix.com
561-745-2917

Lot #
Exp.

PROFESSIONAL USE ONLY