NUTRA-BRL

NutraMedix

APPLICATIONS

- Microbial Support
- Immune System Support
- Inflammatory Response Support

INTRODUCTION

This product is a synergistic blend of Samento *(Uncaria tomentosa)*, Stevia *(Stevia rebaudiana)* and Banderol *(Otoba parvifolia)*. It is designed to assist with comprehensive microbial support.* Our liquid extracts are made at our U.S. manufacturing facility using a specialized proprietary extraction process that optimizes the constituents of the herb in its 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.

Samento is a hydro-ethanol extract from U. tomentosa (bark), also known as Cat's Claw. It is traditionally used for health promotion by indigenous tribes of the Peruvian Amazon, and ongoing research continues to elucidate its health-supporting effects.*[1] U. tomentosa exists in two chemotypes, one of which contains more tetracyclic oxindole alkaloids (TOA) and the other of which contains more pentacyclic oxindole alkaloids (POA). Samento is made from the bark of this rare, TOA-free pentacyclic phenotype which not only meets but exceeds the standards of the U.S. Pharmacopoeia (USP 42), requiring no less than 0.3% of POAs and no more than 0.05% TOAs.[2] Samento is verified by independent third-party HPLC testing to be free of TOAs, with levels in trace amounts or undetectable.[3]

U. tomentosa (bark) includes other active constituents such as esters (ex. carboxyl alkyl), glycosides (ex. quinovic acid), organic acids (ex. oleanolic, ursolic, palmitoleic), procyanidins, sterols (ex. sitosterol), and triterpenes, as well as catechin, rutin, 3,4-dehydro-5-carboxystrictosidine, and many others.[4] *U. tomentosa* may assist with microbial support,[5-7] immune system support,4 healthy inflammatory response support,[8,9] cardiovascular support,10 neurological support,[11-13] blood glucose and metabolic support,[14,15] and antioxidant support.*[16]

Stevia is a hydro-ethanol extract from Stevia leaf (Stevia rebaudiana). *S. rebaudiana* is part of the Asteraceae/Compositae family, native to Brazil and Paraguay, and used as a dietary supplement as well as a sweetener. The constituents responsible for the sweet taste are steviol glycosides, including stevioside, rebaudioside A-F, steviolbioside, isosteviol, and dulcoside A, of which stevioside and rebaudioside A are the most abundant.[17,18] Steviol glycosides are approximately 250-300 times sweeter than sucrose.[18] S. rebaudiana also contains phytosterols such as stigmasterol, beta-sitosterol, and campesterol, as well as flavonoids, diterpenes, triterpenes, vitamins, and minerals.[17,18]

S. rebaudiana may help with microbial support,[19,20,21] inflammatory response support,[22] and antioxidant support.*[23-25] *S. rebaudiana* may also assist with cardiovascular and metabolic support, helping to maintain blood pressure,[26-28] lipid levels,[29-32] and blood glucose,[33-38] already within the normal range.* It may also support satiety and healthy eating habits.*[25,39-41]

Banderol is a hydro-ethanol extract from the bark of wild *Otoba parvifolia*, including mineral water and 20-24% alcohol. *O. parvifolia* is also known as Banderilla tree and belongs to the Myristicaceae family.[42] It is sustainably harvested from the Amazon basin ecosystem, and has been used by indigenous groups in the region for hundreds of years. Traditionally, *O. parvifolia* bark has been used for microbial support.*[43] The proprietary hydro-ethanolic extraction and enhancement process maximizes the bioavailability of isoflavones and other beneficial constituents.*[42] Banderol may help with microbial support.*[7,44-46] It may also help with healthy inflammatory response support.*[47]

MICROBIAL SUPPORT

U. tomentosa (bark) may assist with a broad range of microbial support.*[5-7] *S. rebaudiana* (leaf) may help with diverse types of microbial support, including a variety of morphological forms.*[19-21] It may also help with mycelial support.*[48] *O. parvifolia* (bark) may help with diverse microbial support for various types and morphological forms.*[44-46] Independently, both *O. parvifolia* and *U. tomentosa* assist with microbial support.*[7] In combination, they exhibit more robust support.*[7]

ANTIOXIDANT SUPPORT

Polyphenols and flavonoids in *S. rebaudiana* leaves may contribute antioxidant support to help with normal oxidative stress.*[23,48] *S. rebaudiana* may help to maintain superoxide dismutase (SOD) levels already within the normal range, contributing antioxidant support.*[25]

IMMUNE SYSTEM SUPPORT

U. tomentosa (pentacyclic chemotype) may help to support immune system homeostasis.* Research suggests that POAs help to maintain lymphocyte proliferation-regulating factor levels already within the normal range,[49] $CD4^+$ $CD25^+$ $Foxp3^+$ levels already within the normal range, and Th2 levels already within the normal range.*[14] It should be noted that TOAs inhibit the effect of POAs on lymphocyte-proliferation-regulating factor in a dose-dependent manner, thus TOA-free *U. tomentosa* is required for adequate immune support.*[4] The specific POA mitraphylline may help to support healthy neutrophil function and maintain levels of Th1, Th2, and Th17 already within the normal range.*[50,51] Mitraphylline may also help to support healthy apoptosis.*[52]

INFLAMMATORY RESPONSE SUPPORT

U. tomentosa (pentacyclic chemotype) may help to maintain and support a healthy inflammatory response.*[8,9] *U. tomentosa* may help to support NF-kappaB levels already within the normal range in a dose-dependent manner,[53,54] thus supporting both TNF-alpha and IL-1-beta already within the normal range.*[54]

U. tomentosa and its most prevalent POA alkaloid, mitraphylline, may help

to maintain levels of IL-1-alpha, IL-2, IL-4, IL-6, IL-8, and IL-17 already within the normal range,[55-58] in addition to supporting healthy function of the MAP kinase pathway.*[54,58]

S. rebaudiana may help with healthy inflammatory response support.*[22] Stevioside and its metabolite steviol may assist with cytokine support, helping to maintain healthy levels of TNF-alpha, IL-1-beta, IL-6, and NF-kappaB already within the normal range.*[22] It may also help to maintain levels of cytokine-governing lipopolysaccharides already within the normal range.*[48]

O. parvifolia (bark) may help support a healthy inflammatory response.* *O. parvifolia* has been studied in mice, in which Banderol's inflammatory response support was found comparable to the positive control.*[47]

SAFETY AND CAUTIONS

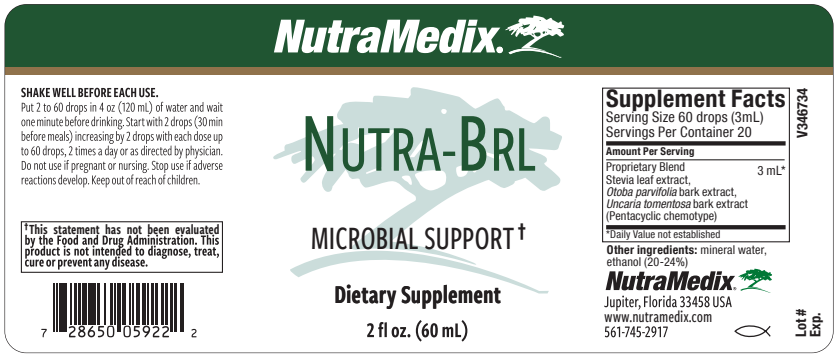
All three herbs are generally well tolerated. With *U. tomentosa*, gastrointestinal effects such as nausea, vomiting, constipation or diarrhea have been reported.[50] With *S. rebaudiana*, nausea and dizziness have been known to occur, though at a similar rate to placebo, and usually resolves after the first week of use.[30] A mouse study using 500 times the human dose of Banderol showed no evidence of side effects or toxicity.[51]

U. tomentosa should be avoided in those taking immunosuppressants, as it may interfere with immunosuppressant therapy.[52] Both *U. tomentosa* and *S. rebaudiana* may inhibit P450 CYP3A4 enzymes and therefore may slow the metabolism of drugs metabolized by CYP3A4.[53,28] *O. parvifolia* inhibits the uptake transporters OATP1B1 and OATP1B3, so caution is warranted with medications that are substrates or inhibitors of OATP1B1 and OATP1B3.[54]

S. rebaudiana may theoretically increase lithium levels due to increased diuresis and decreased lithium excretion.[55] *S. rebaudiana* may theoretically have additive effects when taken concurrently with antidiabetic or antihypertensive medications.[55] While TOA-containing U. tomentosa may have additive effects with antihypertensives and anticoagulants,[56-58] Samento is TOA-free, with levels in trace amounts or undetectable.

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

*** These statements have 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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