Turmeric Complete

CLINICAL APPLICATIONS

- Maintains Normal Inflammatory Balance
- Improves Musculoskeletal Health
- Boosts Joint Health, Movement and Physical Function
- Enhances Workout Recovery Time

MUSCULOSKELETAL HEALTH

This product is formulated specifically to support healthy inflammatory balance and musculoskeletal health. This product includes the innovative ingredient, Complete Turmeric Matrix. This product also includes the proteolytic enzyme, bromelain, as well as the powerful flavonoids quercetin and rutin, for full spectrum, high-intensity support to maintain a balanced cycle of inflammation.

Overview

Inflammation is a natural part of the body's immune response; a cascade triggered to protect and maintain normal tissue repair. This non-specific physiological response is part of the innate immune system, a first line of defense that is mediated locally by protective mechanisms that stimulate chemokine and eventually eicosanoid and cytokine production. This product provides a potent blend of phytonutrients that support healthy inflammatory signaling by balancing prostaglandin, prostacyclin, leukotriene and thromboxane metabolism and inhibit activating signals of a wide variety of compounds involved in pain and inflammation from exercise.

Turmeric (Complete Turmeric Matrix)†

Whole-root turmeric and its active components have been used in traditional Ayurvedic medicine for centuries. In herbal medicine of old, practitioners used teas, tinctures and extracts of all types. In the 21st century, as research grew on the benefits of turmeric, the focus shifted to identifying and isolating one individual compound, curcumin, rather than delivering the comprehensive benefits of a matrix of turmeric bioactives. As a result, concentrating curcumin led to poor absorption and pharmaceutical methods were applied to bypass the gut and increase its bioavailability. The glaring disadvantage of applying this pharmaceutical model to botanicals is that it misses the benefits of other bioactives present within the turmeric matrix and their positive effects on the microbiome.

New research on turmeric shows the additional bioactives in turmeric have additional benefits and enhance bioavailability. The **Complete Turmeric Matrix** includes compounds from the entire turmeric root, all working together as nature intended to deliver better results. The **Complete Turmeric Matrix** formulation contains standardized amounts of 45%–55% curcuminoids, 2%-6% turmerin protein and 3%-8% volatile oil, plus other components that make up the whole turmeric root.[1,2] This matrix of bioactive compounds supports a healthy GI tract, enhances detoxification, creates a healthy microbiome, and helps maintain normal inflammatory balance. The bioactives in **CTM** also support the gut lining, immune system, modulates acute nervous system signaling, low mood and fatigue, and provides cardioprotective and neuroprotective activity via antioxidant mechanisms.[3-5] **CTM** also plays a crucial role in maintaining inflammatory balance in a variety of tissues due to its strong MAPK and NFkB-modulating properties. Studies show **CTM** supports balanced inflammation in the joints and the GI tract.[6-8] In a randomized, double-blind, placebo-controlled clinical trial published in the *Journal of Medicinal Food*, 36 immune joint patients received either a 250 mg dose, 500 mg dose of **CTM**, or placebo twice per day. Objective clinical measures and lab markers were assessed, and the results indicated that **CTM** improved outcome measures and maintained normal inflammatory balance.[9] **CTM's** bioactives promote advanced GI mucosal health,[6-8] intestinal permeability,[10] increase microbiome diversity[11] and balance immune responses to lipopolysaccharides (LPS).[12]

Bromelain†

Bromelain is a mixture of enzymes found in the stem of the pineapple (*Ananas comosus*) that exhibit proteolytic characteristics. Bromelain supports musculoskeletal health and inflammatory balance through a variety of mechanisms.[13] Cell studies demonstrate bromelain locally modulates plasma kinins and fibrin/fibrinogen proteins via MMP, VEGF, bFGF, and EGF activity which all contribute to normal vascular and blood supply to cartilage.[13,14] Bromelain also supports the chondrocyte's normal cell cycle via the p53, NFkB and Bcl-2 pathways, and

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balances IL-1B, IL-6, INF-y, TNF-a cytokines via PGE-2 and COX-2 activity during normal local immune responses.[13,14] Clinically, bromelain is ideal for normal joint health, specifically for athletes, and age-related musculoskeletal challenges. A randomized, double-blinded, placebo-controlled study performed on 176 boxers found that bromelain supported exercise recovery with notable improvements on the face and orbits, lips, ears, chest and arms in four days.[15] A recent randomized clinical study published in *Rheumatology and Orthopedic Medicine*, compared standard medical therapies to proteolytic enzyme therapy in 74 patients with acute joint challenges. Patients were evaluated with joint outcome measures, acute phase labs, and liver and kidney markers. The results showed that bromelain supported normal inflammatory responses and normal liver and kidney function.[16] Studies have also looked at bromelain's role in supporting surgical procedures.[17] Additional benefits of bromelain include supporting sinus health, as well as the health of the GI system.[18,19]

Quercetin†

Quercetin is a powerful antioxidant flavonoid in plants including oak trees, onions and tea. Quercetin has been shown to enhance the absorption of curcumin[20] supports normal immune and inflammatory responses,[21,22] stimulates mitochondrial biogenesis[21] and supports peripheral nerve and spinal cord signaling.[23] Cell studies show quercetin inhibits COXs and LOX enzymes which produce prostaglandins and leukotrienes; LPS-induced TNF-a, IL-8, IL-1a release; prevents mast cell release of histamine and inhibits adhesion molecules such as VCAM-1.[21] Similar to turmeric quercetin has also been shown to support barrier function in the intestines,[24,25] modulate NFkB, MAP kinases and inhibit hyaluronidases and MMPs, which are degradatory connective tissue enzymes.[21] In mice studies, quercetin was shown to decrease acute exercise-induced pain in the muscles and spinal cord.[26,27]

Rutin†

Rutin is a flavonol found abundantly in plants such as apples, tea, buckwheat and passionflower. A number of pharmacological activities show rutin supports a normal inflammatory process, acts as a potent antioxidant, and displays cytoprotective, vasoprotective, neuroprotective, and cardioprotective activity. [28] Rutin also synergistically enhances endogenous antioxidants such as glutathione and exogeneous antioxidant herbs and flavonoids in combination.[29] In mice studies rutin has also been found to stimulate mitochondrial biogenesis in muscle via AMPK activation.[30] Rutin supports connective tissue health by inhibiting the enzymes hyaluronidase, collagenase, LOX and COXs, which all contribute to the degradation of connective tissue.[31] A meta-analysis of six randomized controlled trials published in the *Journal of Pain Research*, compared 270 knee patients who received a combination of rutin and bromelain (OEC) to 266 standard patients who received standard medical therapy. The authors found OEC to be comparable for efficacy while tolerable and safe.[32]

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Directions

2 or more capsules per day or as recommended by your health care professional.

Does Not Contain

Gluten, corn, yeast, artificial colors and flavors.

Cautions

Do not consume this product if you are pregnant or nursing. Consult your physician for further information.

Supplement Facts V3

Serving Size 2 Capsules
Servings Per Container 15 & 45

2 capsules contain	Amount Per Serving	% Daily Value
Vitamin C (as Ascorbic Acid USP)	30 mg	33%
Turmeric Root Extract (Complete Turmeric Matrix) (Standardized to contain 45-55% Curcuminoids, 3-8% Volatile Oil, 2-6% Turmerin)	660 mg	*
Bromelain (from Pineapple)	240 mg (576 GDU)	*
Quercetin Dihydrate	240 mg	*
Rutin	50 mg	*

* Daily Value not established

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