

# Traumeric



## CLINICAL APPLICATIONS

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

## MUSCULOSKELETAL HEALTH

Traumeric is formulated specifically to support healthy inflammatory balance and musculoskeletal health. Traumeric includes the innovative ingredient, Complete Turmeric Matrix. Traumeric 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. Traumeric 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)<sup>†</sup>

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 bioactive compounds from the entire turmeric root such as curcumin, turmerones, turmerin, curcumol, cyclocurcumin, curdione and  $\beta$ -elemene, all synergistically working together as nature intended to deliver better results. 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.<sup>3-5</sup> 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.<sup>6-8</sup> 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.<sup>9</sup> CTM's bioactives promote advanced GI mucosal health,<sup>6-8</sup> intestinal permeability,<sup>10</sup> increase microbiome diversity<sup>11</sup> and balance immune responses to lipopolysaccharides (LPS).<sup>12</sup>

<sup>†</sup> These statements have 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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## 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.<sup>13</sup> 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.<sup>13,14</sup> Bromelain also supports the chondrocyte's normal cell cycle via the p53, NFκB and Bcl-2 pathways, and balances IL-1B, IL-6, INF-γ, TNF-α cytokines via PGE-2 and COX-2 activity during normal local immune responses.<sup>13,14</sup> 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.<sup>15</sup> 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.<sup>16</sup> Studies have also looked at bromelain's role in supporting surgical procedures.<sup>17</sup> Additional benefits of bromelain include supporting sinus health, as well as the health of the GI system.<sup>18,19</sup>

## 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<sup>20</sup> supports normal immune and inflammatory responses,<sup>21,22</sup> stimulates mitochondrial biogenesis<sup>21</sup> and supports peripheral nerve and spinal cord signaling.<sup>23</sup> Cell studies show quercetin inhibits COXs and LOX enzymes which produce prostaglandins and leukotrienes; LPS-induced TNF-α, IL-8, IL-1α release; prevents mast cell release of histamine and inhibits adhesion molecules such as VCAM-1.<sup>21</sup> Similar to turmeric quercetin has also been shown to support barrier function in the intestines,<sup>24,25</sup> modulate NFκB, MAP kinases and inhibit hyaluronidases and MMPs, which are degradatory connective tissue enzymes.<sup>21</sup> In mice studies, quercetin was shown to decrease acute exercise-induced pain in the muscles and spinal cord.<sup>26,27</sup>

## 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.<sup>28</sup> Rutin also synergistically enhances endogenous antioxidants

such as glutathione and exogenous antioxidant herbs and flavonoids in combination.<sup>29</sup> In mice studies rutin has also been found to stimulate mitochondrial biogenesis in muscle via AMPK activation.<sup>30</sup> Rutin supports connective tissue health by inhibiting the enzymes hyaluronidase, collagenase, LOX and COXs, which all contribute to the degradation of connective tissue.<sup>31</sup> 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.<sup>32</sup>

## Directions

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

## Does Not Contain

Gluten, yeast, artificial colors or flavors.

## Cautions

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

## Supplement Facts<sup>V4</sup>

Serving Size 2 Capsules  
Servings Per Container 15 & 45

	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.

Other Ingredients: Hypromellose (Natural Vegetable Capsules), Silicon Dioxide, Magnesium Stearate and Stearic Acid.

ID# 551030 30 Capsules

ID# 551090 90 Capsules

## References

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