

# Inflammatone™



## Natural Support for a healthy inflammatory response

Inflammatone™ is a powerful formula which combines the best of science and enzyme technology for degrading fibrinolytic protein compounds produced during inflammation. Research shows that inflammation is associated with many serious disorders. By controlling the inflammatory processes in multiple metabolic pathways, Inflammatone™ can be helpful in many situations, including osteo and rheumatoid arthritis, atherosclerosis, sports injuries, and post-operative healing.

### Inflammatone™ ingredients target many metabolic pathways of the inflammatory response<sup>1,2</sup>

1. Significant inhibition of the COX-2 (cyclooxygenase) enzyme, which produces prostaglandins PG-E2 (inflammatory) and thromboxanes TX-A2 (vasoconstrictive and increases platelet aggregation). The COX-2 inhibition is achieved by turmeric, ginger, quercetin and resveratrol. The PG-E2 is also known to increase cell proliferation, which may be beneficial for normal tissue growth and wound healing but not for cancer promotion. That is why inflammation is associated with the risk of cancer development in many studies and underscores the importance of keeping inflammation under control.

2. Additional inhibition of the expression of the COX-2 enzyme by antioxidant effects on NF-Kappa B, which is one of the regulators of the cytokine (inflammatory) response. This is achieved by the antioxidant action of turmeric, quercetin, rutin, rosemary and resveratrol. This is a preferred mechanism of inhibition because it acts upstream in the metabolic pathway by reducing oxidative stress, which can be one of the causes of inflammation. Thus, this is a preventive action as opposed to blocking inflammation after it has started.

3. Inflammatone™ ingredients have a minimal inhibition of the COX-1 enzyme which has a maintenance function for a number of tissues in the body, including intestinal cells. This is unlike aspirin or NSAIDs which are very irritating to the GI tract.

4. Inflammatone™ has a mild anti-thrombotic (blood thinning) effect which could result in increased cardiovascular risk protection, similar to that of aspirin yet without aspirin's severe GI irritation. This blood thinning effect of Inflammatone™ is due to the following:

- mild COX-1 inhibition by ginger
- mild anti-coagulating activity of turmeric and quercetin
- fibrinolytic effect of the proteolytic enzymes, especially the serratiopeptidase

Cancer metastasis is known to be mediated by increased platelet aggregation, so any agent that decreases it may reduce the risk of cancer proliferation.<sup>7</sup>

5. Inflammatone™ may be superior to selective COX-2 inhibitors like Vioxx and Celebrex due to the fact that, by design, they are lacking any COX-1 inhibiting activity, which affects platelet aggregation. That is why drugs like Vioxx and Celebrex were shown in studies to increase the risk of thrombosis and overall CVD risk. This is especially important for patients with low omega-3 fatty acid stores.

6. Inflammatone™ may be superior to selective COX-2 inhibiting drugs due to the fact that in addition to inhibiting COX-2, some Inflammatone™ ingredients also inhibit the LOX (lipoxygenase) enzyme. This enzyme is normally producing leukotrienes (LT-4 series) which cause bronchoconstriction and vasoconstriction. The LOX inhibition is achieved through the action of boswellia, turmeric, ginger and quercetin.

7. Inflammatone™ may be superior to the typical anti-asthma drugs that are only leukotriene receptor blockers. This is because Inflammatone™ reduces the formation of leukotrienes (LT) in the first place as opposed to just blocking certain LT receptors, as the drugs do.



**Medicinal Ingredients (per capsule):**

Quercetin.....	37.5 mg
Rutin.....	37.5 mg
Bacterial Protease (Bacillus Subtilis).....	4.77 mg (4768.5 FCC PU)
Boswellia (Boswellia serrata, Gum oleoresin) (60% Boswellic acids, 7.5:1).....	100 mg
Chymotrypsin (Sus scrofa-Pancreas).....	0.39 mg (312.5 USP)
Turmeric (Curcuma longa, Rhizome) (95% Curcuminoids, 55:1).....	100 mg
Protease 4.5 (Fungal protease, Aspergillus flavus var. oryzae).....	10.53 mg (8422 FCC HUT)
Protease 6.0 (Fungal protease, Aspergillus oryzae-Whole).....	48.075 mg (25000 FCC HUT)
Rosemary (Rosmarinus officinalis-Leaf) (7% Carnosic acid, 12:1).....	2.25 mg
Serratiopeptidase (Serratia-Whole Cell).....	2.275 mg (5000 SU)
Resveratrol (Trans-Resveratrol, Reynoutria japonica-Root).....	2.5 mg
Trypsin (Sus scrofa-Pancreas).....	0.39 mg (1875 USP)
Ginger (Zingiber officinale, Rhizome) (5% Gingerol, 4:1).....	100 mg

© 2016 ZTEC-CN INF 7/16

**8.** One additional advantage that Inflammation™ has over selective anti-inflammatory drugs is that it combines many benefits in one, blocking various pathways at the same time. When any one drug is given, it only blocks one arachidonic acid (AA) pathway. For example, Vioxx and Celebrex block only COX-2, which causes an overflow of AA into the other pathway, the LOX-1. That is why COX-2 inhibiting drugs are known to have side effects such as increased incidence of asthma.

**9.** Some of Inflammation's ingredients were shown to block phospholipase A2 (turmeric, ginger) or TNF-alpha (quercetin), which is similar to what corticosteroids do, but without their side effects.

### **Benefits:**

- The flavonoid rutin reduces glycation (in addition to its anti-inflammatory and antioxidant properties).
- Serratiopeptidase improves the efficacy of antibiotic treatment and relieves sinus congestion via mucolytic effects.
- See our Grape Seed Supreme technical sheet for an extensive description of the many benefits of resveratrol such as that on collagen, cardiovascular disease and others conditions.

### **Inflammation™ Competitive Advantages:**

- Synergistic formula
- Inhibits inflammatory processes in multiple metabolic pathways
- Good safety record and extensive research on all ingredients

### **Designs for Health chose not to include the following ingredients for these reasons:**

- Hops was shown to cause urticaria and other allergic effects
- Oleanolic acid was shown to increase insulin production similar to glucose
- Cayenne pepper was shown to cause GI irritation and leaky gut

### **Recommended Use:**

- Take two capsules per day with food, or as directed by a health care practitioner.
- Not recommended for use by pregnant or lactating women.

### **References**

1. FitzGerald GA, Patrono C. The coxibs, selective inhibitors of cyclooxygenase-2. *N Engl J Med.* 2001 Aug 9;345(6):433-42.
2. De Caterina R, Zampolli A. From asthma to atherosclerosis--5-lipoxygenase, leukotrienes, and inflammation. *N Engl J Med.* 2004 Jan 1;350(1):4-7.
3. Ammon HP, Safayhi H. Mechanism of antiinflammatory actions of curcumin and boswellic acids. *J Ethnopharmacol.* 1993 Mar; 38(2-3):113-9.
4. Kiuchi F, Iwakami S. Inhibition of prostaglandin and leukotriene biosynthesis by gingerols and diarylheptanoids. *Chem Pharm Bull (Tokyo).* 1992 Feb; 40(2): 387-91.
5. Guardia T, Rotelli AE. Anti-inflammatory properties of plant flavonoids. Effects of rutin, quercetin and hesperidin on adjuvant arthritis in rat. *Farmaco.* 2001 Sep;56(9):683-7.
6. Lo AH, Liang YC. Carnosol, an antioxidant in rosemary, suppresses inducible nitric oxide synthase through down-regulating nuclear factor-kappaB in mouse macrophages. *Carcinogenesis.* 2002 Jun;23(6):983-91.
7. Surh YJ. Anti-tumor promoting potential of selected spice ingredients with antioxidative and anti-inflammatory activities: a short review. *Food Chem Toxicol* 2002 Aug;40(8):1091-7.
8. Satoskar RR, Shah SJ. Evaluation of anti-inflammatory property of curcumin (diferuloyl methane) in patients with postoperative inflammation. *Int J Clin Pharmacol Ther Toxicol.* 1986 Dec; 24(12): 651-4.

To contact Designs for Health, please call us at (877) 414-9388, or visit us on the web at [www.designsforhealth.ca](http://www.designsforhealth.ca)