# Quercetin Bioflavonoid Complex

# Immune Modulatory Complex of Quercetin, Hesperidin, and Rutin

Quercetin is a polyphenolic flavonoid compound naturally found in fruits, vegetables, and medicinal herbs. [1], [2] These include onions, apples, red wine, *Ginkgo biloba*, and St. John's Wort, to name a few. [3] The name "quercetin" was derived in 1857 from the Latin word *quercetum*, which means "oak forest," after the oak genus *Quercus*. [4] Pure quercetin has a distinct yellow colour and is known for its antioxidant, anti-inflammatory, anticarcinogenic, and immunomodulatory properties. [5]

Quercetin is well-established for its anti-inflammatory effects, making it a valuable adjunct in managing conditions such as prostatitis, rheumatoid arthritis, polycystic ovarian syndrome (PCOS), and other inflammation-related disorders.<sup>[6]</sup> It mediates these effects through inhibition of key proinflammatory enzymes, including cyclooxygenase (COX) and lipoxygenase (LOX), thereby modulating eicosanoid pathways.<sup>[7]</sup> Quercetin also exhibits significant antioxidant activity, largely through its capacity to enhance intracellular glutathione levels and scavenge reactive oxygen species (ROS).[8] These mechanisms have shown clinical and experimental relevance in oncology and in reducing exercise-induced muscle damage.<sup>[9]</sup> Furthermore, quercetin demonstrates antiallergic properties by stabilizing mast cells, inhibiting histamine release, downregulating pro-inflammatory cytokines, and supporting T<sub>h</sub>1/ T<sub>h</sub>2 immune homeostasis.<sup>[10]</sup>, <sup>[11]</sup> Epidemiological data also suggest an inverse correlation between quercetin intake and the risk of coronary artery disease, malignancy, and all-cause mortality.[12]

Quercetin Bioflavonoid Complex includes supporting ingredients to assist immune and cardiovascular function, with the addition of bromelain to enhance all bioactive compound absorption.



#### **Mechanism of Action:**

## Quercetin 250 mg

- · Lowers histamine, [13] inhibits NF-κB [14]
- Promotes T-cell regulation,<sup>[15]</sup> supports B-cell antibody production <sup>[16]</sup>

## Hesperidin 125 mg (from 250 mg citrust bioflavonoids)

- · Reduce proinflammatory cytokines TNF-α, IL-6, and IL-4 (anti-inflammatory); and reduces CRP and malondialdehyde (MDA), a marker of lipid peroxidation (human trials and meta-analysis) [17], [18]
- · Tightens gap junctions [19]

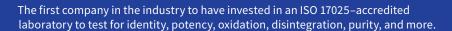
#### Rutin 50 mg

- · Vascular protection, supports collagen stability [20]
- · Tight-junction support [21]

# **Clinical Indications and Adjunctive Support**

- · Seasonal allergies and antiviral
- · Adaptive and regulatory immune system response
- · Auto-immune (IBD)
- · Long CVD, postviral fatigue
- · Cardiovascular support : blood pressure, type 2 diabetes mellitus, metabolic syndrome, high LDL

The synergistic combination of quercetin, hesperidin, and rutin offers broad-spectrum support through complementary anti-inflammatory, antioxidant, and vascular-protective mechanisms, enhancing immune modulation, endothelial function, and overall cellular resilience.













#### References

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Each vegetable capsule contains:	
Quercetin	250 mg
Citrus bioflavonoids (from bitter orange	
[Citrus × aurantium]), 50% hesperidin	250 mg

Bromelain (from pineapple [Ananas comosus var. comosus] stem) (1,800,000 FCC PU) . . . . . . . . 50 mg

Nonmedicinal ingredients: Vegetable magnesium stearate in a non-GMO vegetable capsule composed of vegetable carbohydrate gum and purified water.

Directions of use: Adults ≥ 19 years old: Take 1 capsule daily with food or as directed by your health-care practitioner.

Duration of use: Consult a health-care practitioner for use beyond 4 weeks.

Cautions and warnings: Consult a health practitioner prior to use if you are pregnant or breast-feeding; if you are taking prescription medication; if you have gastrointestinal lesions/ulcers; if you are taking anticoagulant agents, antiinflammatory agents or antibiotics; or before having surgery.

Known adverse reactions: Hypersensitivity/allergy has been known to occur; in which case, discontinue use. Nausea, vomiting, and diarrhea have been known to occur; in which case, discontinue use and consult a health-care practitioner.

Product #0310 · 90 vegetable capsules · NPN 80037398 · V0190-R3