



**TRI-ROSEN**

3

## Rosemary Triterpenes

Provide Inherent All-in-One Effects

●  
Athletic Recovery\*  
Metabolic Support\*  
Stable Energy\*



## Athletic and Metabolic Benefits Hidden in Well-loved Cooking Herb\*

**HPLC Analysis  
Confirms Powerful  
Triterpene Composition**

**Rosmarinic Acid  
Ursolic Acid  
Carnosic Acid**

**Optimal 8:4:3 Ratio**

While rosemary (*Rosmarinus officinalis*) has been prized for centuries in Mediterranean cuisine, its greater value may stem from its lesser-known human health benefits. The perennial herb owes its fragrance and aroma to a remarkable phytochemical composition, including antioxidant triterpenes.

Three rosemary triterpenes—namely ursolic acid, carnosic acid, and rosmarinic acid—are the subjects of continued laboratory and clinical research. These antioxidants have been found to provide support for cardiovascular health, lipid metabolism, and even muscular function.\*

Cepharm has optimized levels of these triterpenes utilizing a proprietary column extraction process. Our TRI-ROSEN™ ingredient is harvested from wild-growing plants in Morocco, extracted at Chemical Resources, an NSF-GMP facility in India, and repeat-tested to confirm triterpene concentrations. TRI-ROSEN™ is ideal for athletic and metabolic health blends or as a single-ingredient product to support healthy athletic recovery.\*

### Take a Fresh Look at a Familiar Herb

TRI-ROSEN™ Rosemary Extract provides ursolic acid, carnosic acid, and rosmarinic acid in an optimal 8:4:3 ratio. These antioxidants provide all-in-one effects for athletic and metabolic goals:

- Promote healthy glucose uptake in skeletal muscle cells\***
- Help support healthy and comfortable muscle function\***
- Support cardiovascular health\***
- Help maintain healthy triglyceride levels\***
- Encourage healthy thermogenesis\***
- May help maintain balanced mood and energy levels\***



\*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.

\*This material is for professional education only. Not for consumer distribution.





## Clinical Research Sheds Light on an Overlooked Phytochemical Source

Lab and clinical research continues to reveal the effects and complex methods of action of these novel triterpenes. Rosemary extract promises to be the next must-have in performance athletic blends. Cepham's TRI-ROSEN™ is the highest quality, providing all three target phytochemicals at an affordable price.

**Cardiovascular Health:** Rosemary triterpenes have been found to support vascular integrity by promoting healthy MMP activity in vascular cells. Carnosic acid also helps maintain healthy cholesterol levels, likely through influencing hepatic lipogenic activity.\*

**Athletic Performance:** Laboratory research has confirmed rosemary's purported ability to promote comfortable muscle function. It appears that rosemary oil promotes balanced nerve function and promotes healthy circulation to muscle tissue. Preliminary research has also noted that ursolic acid appears to support healthy muscle growth. Future research will need to identify precise methods of action and further confirm clinical effects.\*

**Metabolism:** Rosemary extract supports healthy glucose uptake in skeletal muscle cells. It appears to influence the AMP-activated protein kinase (AMPK) pathway. The end result appears to be glucose-balancing, resulting in levels that are neither too low, nor too high, regardless of study model. This glucose metabolism effect may be responsible for rosemary's reported ability to support balanced energy levels. Animal model studies also show that rosemary extract promotes healthy hepatic fatty acid oxidation. The triterpenes appear to promote healthy fat metabolism, which results in support for balanced weight management.\*

**Other Effects:** As is often the case with powerful antioxidants, they can have far-reaching effects in diverse body systems. Preliminary research has also found that rosemary triterpenes can promote balanced COX activity and may support balanced mood. Rosemary extract appears to promote healthy activity of the neurotransmitter acetylcholinesterase. These are valuable side-benefits for the performance athlete or any adult with major exercise goals.\*

**Athletic Recovery\* | Metabolic Support\* | Stable Energy\***





## TRI-ROSEN™ Ingredient Summary

TRI-ROSEN™ is a solvent extract of *Rosmarinus officinalis* leaves. Our column extraction method optimizes it as an athletic performance and recovery ingredient.\*

### Demonstrated safe

Acute oral toxicity established at 2000 mg/kg body weight

Ames' bacterial reverse mutation assay, conducted under GLP, confirmed its non-mutagenic potential

BSE/TSE free

### Proprietary column extraction process

### GMO-free

### Manufactured in NSF-GMP certified plant

### Manufacturing versatility

Slightly soluble in water

Fully soluble in most organic solvents

### Assay (ODB, HPLC)

Ursolic Acid – 8.0% or greater

Carnosic Acid – 4.0% or greater

Rosmarinic Acid – 3.0% or greater

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### **Doing Well and Doing Good**

Rosemary is native to semi-arid regions of the Mediterranean and Asia and grows in similar biomes in Africa. The woody herb is sturdy, prolific, and drought tolerant, but it has been vulnerable to over-harvesting in North Africa. This issue has been regionally remedied by educating farmers regarding appropriate harvesting, pruning, and cultivating of wild-growing rosemary fields.

Cepharm partners with a regional co-operative that is empowered by a USAID/IAA (Integrated Agriculture and Agribusiness) Program in Morocco. Our ingredient partnership requires highly regulated quality processing and sustainable harvesting practices to ensure a long-term supply. Sustainable rosemary harvesting also provides a long-term economic opportunity in the growing region.

### **What's in a Name?**

The Latin name *Rosmarinus* actually means dew (*ros*) of the sea (*marinus*). Folk traditions adapted the Latin name into the common "rosemary" through mythic associations with the Virgin Mary. The common name and Latin name may sound similar, but they have completely different meanings.

## About Cephram

Cephram is an NSF and GMP certified manufacturer of fine herbal ingredients. We draw upon our vast research experience in the pharmaceutical industry to find the most bioactive compounds in herbal medicine. We have offices in both the U.S. and India, and our ethnobotanists travel the globe looking for the most promising and efficacious herbal solutions for human health goals.

Our quality control team monitors every step in our manufacturing processes to ensure full compliance with all GMPs and regulations in Europe, North America, and Asia. We also make it our goal to obtain NSF certification for our products, as well as USDA Organic Certifications and Kosher Certifications when applicable. We're committed to upholding the highest standards for purity, safety, and efficacy.



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