

## Energy Recharge

### DESCRIPTION

The ingredients in Energy Recharge provide stimulant-free energy support from bioactive polyphenols. Robuvit®, a patented plant extract from oak wood, helps to facilitate mitochondrial turnover and is combined with CoQ<sub>10</sub>, vitamin B<sub>5</sub>, and curcumin for metabolic energy.‡

### INDICATIONS

- Cellular energy for general fatigue ‡
- Antioxidant support ‡

### FUNCTIONS AND MECHANISM OF ACTION

Oak wood contains a specific profile of bioactive polyphenols named roburins that are part of the ellagitannins (ETs). Robuvit® is standardized and specified to contain at least 40% polyphenols including grandinin, ellagic acid (EA) and gallic acid extracted from the wood of oak. Ellagitannins in oak are metabolized by the microflora of the gut to urolithins. Urolithins have also been shown to support mitophagy and generation of new mitochondria for energy production. Preliminary human data with oak extract showed reduced oxidative stress markers, including advanced oxidation protein products and lipoperoxides in serum, as well as support for total antioxidant capacity and activities of antioxidant enzymes, Cu/Zn superoxide dismutase and catalase in red blood cells. In a study in healthy elderly individuals, the analysis focused on the comparison of pre and post effects of Robuvit® on symptoms of fatigue. In the total group of volunteers, a significant increase of average question scores was found in three of four subscales of feelings (energy, tiredness, and tension) after 4 weeks of Robuvit® administration. These results demonstrate a positive effect of Robuvit® on mental and energy levels in healthy individuals without any unwanted side effects. In another pilot study, Robuvit® showed benefits in overall mood at a dose of 200 mg daily.‡

Coenzyme Q<sub>10</sub> is an important cofactor in the mitochondrial electron transport chain, the biochemical pathway in cellular respiration from which adenosine triphosphate (ATP) and metabolic energy is derived. Since nearly all cellular activities are dependent upon energy, coenzyme Q<sub>10</sub> is essential for the health of all human tissues and organs. The biosynthesis of CoQ<sub>10</sub> decreases with age, making supplementation an alternative option for ensuring adequate energy production.‡

Curcumin has shown promise in preclinical models of occasional fatigue, potentially by supporting mitochondrial function and immune mediator balance. Curcumin has demonstrated in human trials to moderate cyclooxygenase-2 (COX-2), prostaglandins, leukotrienes, and other cytokines involved in immune signaling pathways. BioPerine® is the only product sourced out of piperine to obtain a patented status for its ability to increase the bioavailability of nutritional compounds. It has undergone clinical studies to substantiate safety and efficacy for nutritional use. Bioavailability of curcumin (2,000 mg) when co-administered with BioPerine® (20 mg) was enhanced by 20-fold or 2,000% compared to bioavailability of curcumin alone.‡

### SOURCING

Robuvit® is a registered proprietary water extract obtained from the wood of *Quercus robur*, exclusive to oak trees grown in France.

BioPerine® is a patented extract obtained from black pepper fruits (*Piper nigrum*) standardized minimum to 95% Piperine grown in India.

### FORMULA (#202511)

Serving Size 1 vegetarian capsule:

Vitamin B <sub>5</sub> (pantothenic acid).....	50 mg
Robuvit® French Oak Wood Extract.....	100 mg
Coenzyme Q <sub>10</sub> (as ubiquinone).....	50 mg
Turmeric ( <i>Curcuma longa</i> , root) (standardized to 95% curcumin).....	50 mg

BioPerine® (*piper nigrum*, black pepper fruit extract)..... 5 mg  
Other ingredients: Hydroxypropyl methylcellulose (capsule), microcrystalline cellulose, hydroxypropyl cellulose, ascorbyl palmitate, silica

## SUGGESTED USE

Adults take 1 capsule, 2-3 times daily or as directed by a health professional.

## STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

## REFERENCES

- Surh YJ. *Food Chem Toxicol* 2002;40:1091-7.  
Araujo CC, Leon LL. *Mem Inst Oswaldo Cruz* 2001;96:723-8.  
Shah BH, Nawaz Z, Pertani SA. *Biochem Pharmacol* 1999;58:1167-72.  
Antony S, Kuttan R, Kuttan G. *Immunol Invest* 1999;28:291-303.  
Folkers K, Simonsen R. *Biochim Biophys Acta Mol Basis Dis* 1995;1271:281-286.  
Folkers K, Littarru GP, Yamagami Y, Eds. *Vol 6, Elsevier Science Publishers*, 1991.  
Bliznakov EG. *Elsevier Science Publishers*, 1981, 3:331-326.  
Shoba G. et al. *Planta Med.* 1998 May;64(4):353-6.  
Országhová Z, et al. *Phytother Res* 29: 1219-1224, 2015.  
Horvathova M, et al. *Oxid Med Cell Longev* doi:639868, 2014.  
Natella F, et al. *J Agric Food Chem* 15: 443-453, 2014.  
de Oliveira, Marcos Roberto, et al. *Biotechnology advances* 34.5 (2016): 813-826.  
Huang, Wen-Ching, et al. *Nutrients* 7.2 (2015): 905-921.  
Gupta, Amit, et al. *Immunobiology* 214.1 (2009): 33-39.  
Agarwal, Krishna Adit, et al. *Surgical endoscopy* 25.12 (2011): 3805-3810.  
Bhagavan, H. N., & Chopra, R. K. (2006). *Free radical research*, 40(5), 445-453.  
Nicolson GL, Conklin KA. *Clin Exp Metastasis*. 2008; 25 (2): 161-9.  
Tiano L., et al. *Eur Heart J*. 2007 Sep; 28 (18): 2249-55.

**For more information on Energy Recharge visit [douglaslabs.com](http://douglaslabs.com)**

‡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.

Manufactured for  
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