

## Osteo Renew

Comprehensive Support  
for Healthy Bones\*

### Osteo Renew Supplementation

Bone health is a major concern for postmenopausal women, given declining estrogen levels cause increased pro-inflammatory cytokines.<sup>1</sup> Osteo Renew supports healthy bone metabolism and healthy inflammatory markers in the body with a blend of vitamin D, vitamin K1, xanthohumol from hops extract, and berberine.<sup>2</sup>

The ingredients in Osteo Renew are dosed in a manner that is congruous with what research suggests to be effective and safe, particularly for supporting healthy bone metabolism.\*

Clinical evidence and research cited herein show that the ingredients in Osteo Renew may:

- Support healthy bone metabolism\*
- Promote healthy oxidative stress\*
- Support healthy inflammatory markers in the body\*

### How Osteo Renew Works

Vitamin D plays a critical role in supporting and promoting serum calcium and phosphorus concentrations needed for healthy bones.\*<sup>3</sup> Vitamin K1 is a coenzyme for glutamate decarboxylase, a protein associated with bone tissue.<sup>4</sup> Supplementation with vitamins D and K1 may support healthy bone metabolism by promoting bone turnover and maintaining healthy levels of undercarboxylated osteocalcin.\*<sup>5,6</sup>

Xanthohumol is a bioactive flavonoid molecule found in the female hops plant. Studies show it has numerous nutraceutical benefits and is much more potent than other modified derivative forms from the hops plant, such as THIAA and RIAA.<sup>7,8,9</sup>

Osteo Renew contains xanthohumol for its phytoestrogen compounds with estrogen-like activities on bone metabolism.<sup>10</sup> Xanthohumol positively affects osteoclastogenesis and bone resorption to support bone health in postmenopausal women.\*<sup>11,12</sup>

Berberine is a benzyl tetra isoquinoline alkaloid known for its free radical scavenging abilities.<sup>13</sup> It has been used for centuries in traditional Chinese medicine and Ayurveda to promote healthy oxidative stress and support healthy inflammatory markers in the body.\*<sup>14</sup>



# Supplement Facts

Serving Size: 1 Capsule  
Servings Per Container: 60

	Amount Per Serving	%DV*
Vitamin D3 (cholecalciferol)	12.5 mcg	63%
Vitamin K1 (phytonadione)	500 mcg	417%
Hops Extract (flower; <i>Humulus lupulus</i> ) (2% xanthohumol)	100 mg	**
Berberine HCl	90 mg	**

**Other Ingredients:** Microcrystalline cellulose, hypromellose, vegetable magnesium stearate, silica.

**Directions:** Take one capsule twice daily or as directed by your healthcare practitioner.

**Caution:** If you are pregnant, nursing, or taking medication, consult your healthcare practitioner before use. Keep out of reach of children.

## References:

- Holick, M. F., Lamb, J. J., Lerman, R. H., Konda, V. R., Darland, G., Minich, D. M., Desai, A., Chen, T. C., Austin, M., Kornberg, J., Chang, J. L., Hsi, A., Bland, J. S., & Tripp, M. L. (2010). Hop rho iso-alpha acids, berberine, vitamin D3 and vitamin K1 favorably impact biomarkers of bone turnover in postmenopausal women in a 14-week trial. *Journal of Bone and Mineral Metabolism*, 28(3), 342-350.
- Cashman, K. D. (2007). Diet, nutrition, and bone health. *The Journal of Nutrition*, 137(11), 2507S-2512S.
- Holick, M. F. (1996). Vitamin D and bone health. *The Journal of Nutrition*, 126(4), 1159S-1164S.
- Bügel, S. (2003). Vitamin K and bone health. *Proceedings of the Nutrition Society*, 62(4), 839-843.
- Mezquita-Raya, P., Muñoz-Torres, M., Luna, J. D., Luna, V., Lopez-Rodriguez, F., Torres-Vela, E., & Escobar-Jiménez, F. (2001). Relation between vitamin D insufficiency, bone density, and bone metabolism in healthy postmenopausal women. *Journal of Bone and Mineral Research*, 16(8), 1408-1415.
- Bügel, S. (2008). Vitamin K and bone health in adult humans. *Vitamins & Hormones*, 78, 393-416.
- Tripp, M. L., Konda, V. R., Darland, G., Desai, A., Chang, J.-L., Caroll, B. J., & Bland, J. S. (2009). Rho-iso-alpha acids and tetrahydro-iso-alpha acids are selective protein kinase inhibitors which potently reduce inflammation in macrophages in vitro and in the collagen-induced rheumatoid arthritis model in vivo. *Acta Horticulturae*, 848.
- Karabin, M., Hudcova, T., Jelinek, L., & Dostalek, P. (2015). Biotransformations and biological activities of hop flavonoids. *BioTechnology Advances*, 33(6), 1063-1090.
- Magalhaes, P. J., Carvalho, D. O., Cruz, J. M., Guido, L. F., & Barros, A. A. (2009). Fundamentals and health benefits of xanthohumol, a natural product derived from hops and beer. *Natural Product Communications*, 4(5), 591-610.
- Effenberger, K. E., Johnsen, S. A., Monroe, D. G., Spelsberg, T. C., & Westendorf, J. J. (2005). Regulation of osteoblastic phenotype and gene expression by hop-derived phytoestrogens. *The Journal of Steroid Biochemistry and Molecular Biology*, 96(5), 387-399.
- Schilling, T., Ebert, R., Raaijmakers, N., Schütze, N., & Jakob, F. (2014). Effects of phytoestrogens and other plant-derived compounds on mesenchymal stem cells, bone maintenance and regeneration. *The Journal of Steroid Biochemistry and Molecular Biology*, 139, 252-261.
- Li, J., Zeng, L., Xie, J., Yue, Z., Deng, H., Ma, X., Zheng, C., Wu, X., Luo, J., & Liu, M. (2015). Inhibition of osteoclastogenesis and bone resorption in vitro and in vivo by a prenylflavonoid xanthohumol from hops. *Scientific Reports*, 5.
- Shirwaikar, A., Shirwaikar, A., rajendran, K., & Punitha, I. S. R. (2006). In vitro antioxidant studies on the benzyl tetra isoquinoline alkaloid berberine. *Biological and Pharmaceutical Bulletin*, 29(9), 1906-1910.
- Tillhon, M., Ortiz, L. M. G., Lombardi, P., & Scovassi, I. (2012). Berberine: New perspectives for old remedies. *Biochemical Pharmacology*, 84(10), 1260-1267.

\* 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.

For more information, visit: [www.nutriodyn.com](http://www.nutriodyn.com)