

perluxan™ standardized hops cones extract

a botanical support for joint health

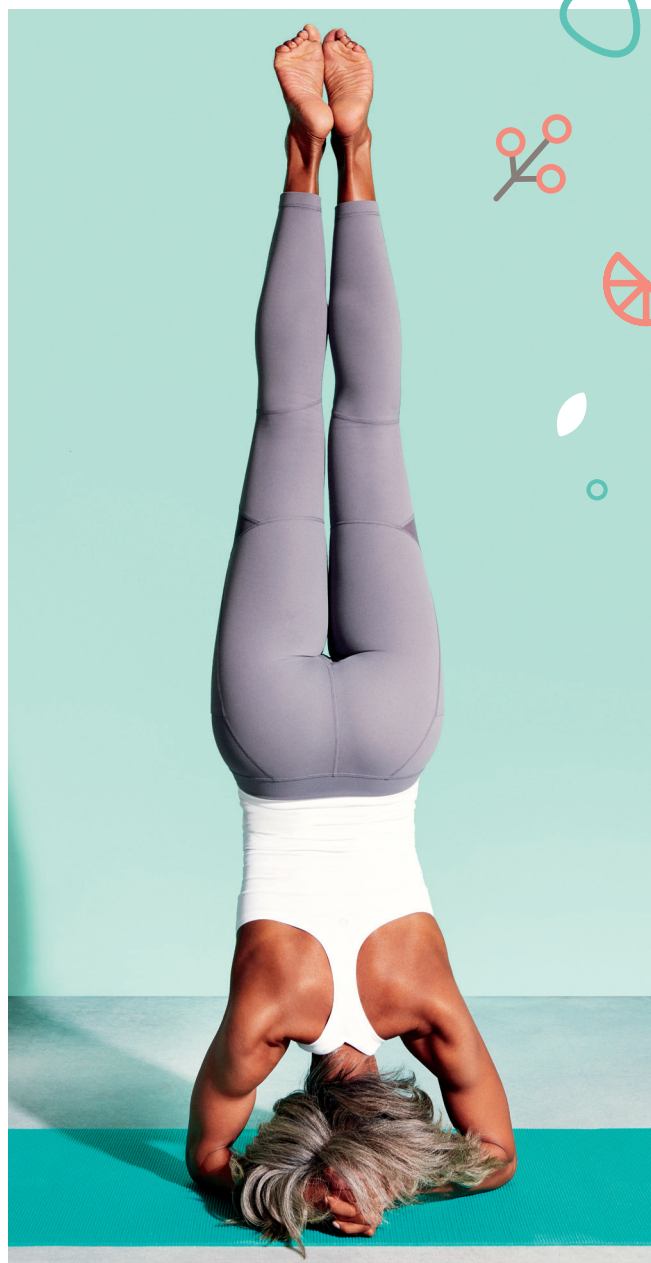
description

Perluxan™ extract is a proprietary extract of hops cones that is standardized to contain a minimum 30% of alpha- and iso-alpha acids, humulone and co-humulone¹.

key features and benefits†

- Perluxan™ extract may mitigate the effects of nitric oxide and cyclooxygenase-2 (COX-2)—some of the compounds that are responsible for inflammation and pain.
- One *in vitro* study showed that alpha-acid hops extracts, like Perluxan™ extract, inhibited nitric oxide response in mouse macrophage cells². In another, alpha-acids extracted from hops were effective in inhibiting COX-2 in CACO-2 cells. In the second part of the study, human subjects submitted blood samples for analysis. Perluxan™ extract was shown to be effective at COX-2 inhibition for nine hours³.
- In a separate study, participants reported that Perluxan™ extract had a fast-acting effect on relieving joint discomfort, as compared with a placebo, two hours after the first dose⁴.
- Perluxan™ extract is gentle on the gut. A study published in *Phytochemistry* measured the fecal calprotectin content of subjects who had consumed a modified hops extract. This biomarker was used as a surrogate for evaluation of gastrointestinal inflammation. After 14 days, hops extract induced no change in fecal calprotectin, whereas consumption of ibuprofen increased the marker 200%⁵.

†These statements have not been approved by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.



advantages

- the active compounds in Perluxan™ extract reduce inflammatory markers in laboratory tests (*in vitro* and *ex vivo*)
- plant-derived alternative to relieve joint discomfort
- no indication of gastrointestinal irritation
- fast absorption supported by studies
- functional ingredient from a food source, not a drug

recommended dosage

500–1,000 mg daily; can be administered orally in capsules and tablets

product safety

Perluxan™ extract is derived from a high-alpha-acid variety of hops using supercritical carbon dioxide rather than through solvent extraction, and thus has no residual organic solvents. Perluxan™ has been shown to have good tolerability and a strong safety profile⁵.

Perluxan™ is made in the United States.

product form

Perluxan™ extract is supplied as a spray-dried powder in 25 kg drums. Other package sizes are available to meet customer needs.

Perluxan™ extract has a two-year shelf life.

physical and chemical properties^{2,6}

- **chemical composition:** a standardized extract from hops containing not less than 30% of alpha- and iso-alpha acids, and not less than 10% beta-acids
HPLC assay – humulone, cohumulone, adhumulone, iso-cohumulone, and iso-adhumulone
other ingredients: maltodextrin, starch
- **appearance and description:**
light green to yellow, free-flowing powder
slightly sweet aroma, bitter taste
- **solubility:** 0.1% at pH 7.4 in water
- **bulk density:** 0.30 – 0.55 g/mL
- **incompatibilities:** none known



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references

- ¹ Perluxan™ SD 0308874558 Certificate of Analysis and Product Data Sheet, from Ashland.
- ² Zhao, F, Nozawa, H, Daikonnya, A, Kondo, K, Kitanaka, S. *Biol Pharm Bull.* 2003 26(1): 61-65.
- ³ Lemay, M, Murray, MA, Davies, A, Roh-Schmidt, H, Randolph, RK. *Asia Pac J Clin Nutrition.* 2004 13(suppl):S110.
- ⁴ Pizzolo, CC, Simon, A. Internal testing data. 2006
- ⁵ Hall, AJ, Babish, JG, Darland, GK, Carroll, BJ, Konda, VR, Lerman, RH, Bland, JS, Tripp, ML. *Phytochem* 2008 69: 1534-1547.
- ⁶ Rager, J. (2002). Internal study. Lipoprotein Technologies.

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