

References

Hops

- 1 Monographs on the medicinal uses of plant drugs. Exeter, UK: European Scientific Co-op Phytother, 1997.
- 2 Blumenthal M, ed. The Complete German Commission E Monographs: Therapeutic Guide to Herbal Medicines. Trans. S. Klein. Boston, MA: American Botanical Council, 1998.
- 4 Newall CA, Anderson LA, Philpson JD. Herbal Medicine: A Guide for Healthcare Professionals. London, UK: The Pharmaceutical Press, 1996.
- 12 McGuffin M, Hobbs C, Upton R, Goldberg A, eds. American Herbal Products Association's Botanical Safety Handbook. Boca Raton, FL: CRC Press, LLC 1997.
- 19 Brinker F. Herb Contraindications and Drug Interactions. 2nd ed. Sandy, OR: Eclectic Medical Publications, 1998.
- 3701 Zava DT, Dollbaum CM, Blen M. Estrogen and progestin bioactivity of foods, herbs, and spices. Proc Soc Exp Biol Med 1998;217:369-78. [View abstract](#).
- 4912 Electronic Code of Federal Regulations. Title 21. Part 182 -- Substances Generally Recognized As Safe. Available at:
<https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=182>
- 6180 Eagon PK, Elm MS, Hunter DS, et al. Medicinal herbs: modulation of estrogen action. Era of Hope Mtg, Dept Defense; Breast Cancer Res Prog, Atlanta, GA 2000;Jun 8-11.
- 6248 Leathwood PD, Chauffard F, Heck E, Munoz-Box R. Aqueous extract of valerian root (*Valeriana officinalis* L.) improves sleep quality in man. Pharmacol Biochem Behav 1982;17:65-71. [View abstract](#).
- 9990 Dixon-Shanies D, Shaikh N. Growth inhibition of human breast cancer cells by herbs and phytoestrogens. Oncol Rep 1999;6:1383-7.. [View abstract](#).
- 9998 Liu J, Burdette JE, Xu H, et al. Evaluation of estrogenic activity of plant extracts for the potential treatment of menopausal symptoms. J Agric Food Chem 2001;49:2472-9.. [View abstract](#).
- 10683 Miranda CL, Stevens JF, Helmrich A, et al. Antiproliferative and cytotoxic effects of prenylated flavonoids from hops (*Humulus lupulus*) in human cancer cell lines. Food Chem Toxicol 1999;37:271-85.. [View abstract](#).
- 10684 Milligan SR, Kalita JC, Heyerick A, et al. Identification of a potent phytoestrogen in hops (*Humulus lupulus* L.) and beer. J Clin Endocrinol Metab 1999;84:2249-52.. [View abstract](#).
- 10685 Milligan SR, Kalita JC, Pocock V, et al. The endocrine activities of 8-prenylnaringenin and related hop (*Humulus lupulus* L.) flavonoids. J Clin Endocrinol Metab 2000;85:4912-5.. [View abstract](#).
- 10686 Henderson MC, Miranda CL, Stevens JF, et al. In vitro inhibition of human P450 enzymes by prenylated flavonoids from hops, *Humulus lupulus*. Xenobiotica 2000;30:235-51.. [View abstract](#).
- 11093 Overk CR, Yao P, Chadwick LR, et al. Comparison of the in vitro estrogenic activities of compounds from hops (*Humulus lupulus*) and red clover (*Trifolium pratense*). J Agric Food Chem 2005;53:6246-53. [View abstract](#).
- 14384

Nozawa H. Xanthohumol, the chalcone from beer hops (*Humulus lupulus L.*), is the ligand for farnesoid X receptor and ameliorates lipid and glucose metabolism in KK-A(y) mice. *Biochem Biophys Res Commun* 2005;336:754-61. [View abstract](#).

14385

Monteiro R, Becker H, Azevedo I, Calhau C. Effect of hop (*Humulus lupulus L.*) flavonoids on aromatase (estrogen synthase) activity. *Agric Food Chem* 2006;54:2938-43. [View abstract](#).

14386

Colgate EC, Miranda CL, Stevens JF, et al. Xanthohumol, a prenylflavonoid derived from hops induces apoptosis and inhibits NF-kappaB activation in prostate epithelial cells. *Cancer Lett* 2007;246:201-9. [View abstract](#).

15018

Morin CM, Koetter U, Bastien C, et al. Valerian-hops combination and diphenhydramine for treating insomnia: a randomized placebo-controlled clinical trial. *Sleep* 2005;28:1465-71. [View abstract](#).

18327

Lukaczer D, Darland G, Tripp M, et al. A pilot trial evaluating Meta050, a proprietary combination of reduced iso-alpha acids, rosemary extract and oleanolic acid in patients with arthritis and fibromyalgia. *Phytother Res* 2005;19(10):864-9. [View abstract](#).

19419

Schmitz M, Jäckel M. [Comparative study for assessing quality of life of patients with exogenous sleep disorders (temporary sleep onset and sleep interruption disorders) treated with a hops-valarian preparation and a benzodiazepine drug]. *Wien Med Wochenschr*. 1998;148:291-8. [View abstract](#).

19420

Müller-Limmroth W, Ehrenstein W. [Experimental studies of the effects of Seda-Kneipp on the sleep of sleep disturbed subjects; implications for the treatment of different sleep disturbances (author's transl)]. *Med Klin*. 1977 Jun 24;72:1119-25. [View abstract](#).

30055

Weeks, B. S. Formulations of dietary supplements and herbal extracts for relaxation and anxiolytic action: Relarian. *Med Sci Monit*. 2009;15(11):RA256-RA262. [View abstract](#).

34008

Stevens, J. F. and Page, J. E. Xanthohumol and related prenylflavonoids from hops and beer: to your good health! *Phytochemistry* 2004;65(10):1317-1330. [View abstract](#).

34032

Possemiers, S., Bolca, S., Grootaert, C., Heyerick, A., Decroos, K., Dhooge, W., De, Keukeleire D., Rabot, S., Verstraete, W., and Van de Wiele, T. The prenylflavonoid isoxanthohumol from hops (*Humulus lupulus L.*) is activated into the potent phytoestrogen 8-prenylnaringenin in vitro and in the human intestine. *J Nutr* 2006;136(7):1862-1867. [View abstract](#).

34267

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., and Tripp, M. L. 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. *J Bone Miner Metab* 2010;28(3):342-350. [View abstract](#).

34277

Lamb, J. J., Holick, M. F., Lerman, R. H., Konda, V. R., Minich, D. M., Desai, A., Chen, T. C., Austin, M., Kornberg, J., Chang, J. L., Hsi, A., Bland, J. S., and Tripp, M. L. Nutritional supplementation of hop rho iso-alpha acids, berberine, vitamin D(3), and vitamin K(1) produces a favorable bone biomarker profile supporting healthy bone metabolism in postmenopausal women with metabolic syndrome. *Nutr Res* 2011;31(5):347-355. [View abstract](#).

35919

Wang, Y. J., Dou, J., Cross, K. P., and Valerio, L. G., Jr. Computational analysis for hepatic safety signals of constituents present in botanical extracts widely used by women in the United States for treatment of menopausal symptoms. *Regul Toxicol Pharmacol*. 2011;59(1):111-124. [View abstract](#).

35935

- Shou, C., Li, J., and Liu, Z. Complementary and alternative medicine in the treatment of menopausal symptoms. Chin J Integr Med 2011;17(12):883-888. [View abstract](#) **37425**
- Swanson-Flatt, S. K., Day, C., Flatt, P. R., Gould, B. J., and Bailey, C. J. Glycaemic effects of traditional European plant treatments for diabetes. Studies in normal and streptozotocin diabetic mice. Diabetes Res 1989;10(2):69-73. [View abstract](#) **53707**
- Sun J. Morning/evening menopausal formula relieves menopausal symptoms: a pilot study. J Altern Complement Med 2003;9:403-9. [View abstract](#) **55323**
- Vonderheid-Guth, B., Todorova, A., Brattstrom, A., and Dimpfel, W. Pharmacodynamic effects of valerian and hops extract combination (Ze 91019) on the quantitative-topographical EEG in healthy volunteers. Eur J Med Res 4-19-2000;5(4):139-144. [View abstract](#) **55324**
- Miranda, C. L., Yang, Y. H., Henderson, M. C., Stevens, J. F., Santana-Rios, G., Deinzer, M. L., and Buhler, D. R. Prenylflavonoids from hops inhibit the metabolic activation of the carcinogenic heterocyclic amine 2-amino-3-methylimidazo[4, 5-f]quinoline, mediated by cDNA-expressed human CYP1A2. Drug Metab Dispos 2000;28(11):1297-1302. [View abstract](#) **55325**
- Mannering, G. J., Shoeman, J. A., and Deloria, L. B. Identification of the antibiotic hops component, colupulone, as an inducer of hepatic cytochrome P-4503A in the mouse. Drug Metab Dispos 1992;20(2):142-147. [View abstract](#) **55326**
- Stevens, J. F., Miranda, C. L., Frei, B., and Buhler, D. R. Inhibition of peroxynitrite-mediated LDL oxidation by prenylated flavonoids: the alpha,beta-unsaturated keto functionality of 2'-hydroxychalcones as a novel antioxidant pharmacophore. Chem Res Toxicol 2003;16(10):1277-1286. [View abstract](#) **55328**
- Langezaal, C. R., Chandra, A., and Scheffer, J. J. Antimicrobial screening of essential oils and extracts of some Humulus lupulus L. cultivars. Pharm Weekbl Sci 12-11-1992;14(6):353-356. [View abstract](#) **55329**
- Simpson, W. J. and Smith, A. R. Factors affecting antibacterial activity of hop compounds and their derivatives. J Appl Bacteriol. 1992;72(4):327-334. [View abstract](#) **55330**
- Yajima, H., Ikeshima, E., Shiraki, M., Kanaya, T., Fujiwara, D., Odai, H., Tsuboyama-Kasaoka, N., Ezaki, O., Oikawa, S., and Kondo, K. Isohumulones, bitter acids derived from hops, activate both peroxisome proliferator-activated receptor alpha and gamma and reduce insulin resistance. J Biol Chem 8-6-2004;279(32):33456-33462. [View abstract](#) **55331**
- Gora, A., Skorska, C., Sitkowska, J., Prazmo, Z., Krysinska-Traczyk, E., Urbanowicz, B., and Dutkiewicz, J. Exposure of hop growers to bioaerosols. Ann.Agric.Environ.Med 2004;11(1):129-138. [View abstract](#) **55332**
- Schellenberg, R., Sauer, S., Abourashed, E. A., Koetter, U., and Brattstrom, A. The fixed combination of valerian and hops (Ze91019) acts via a central adenosine mechanism. Planta Med 2004;70(7):594-597. [View abstract](#) **55333**
- Skorska, C., Mackiewicz, B., Gora, A., Golec, M., and Dutkiewicz, J. Health effects of inhalation exposure to organic dust in hops farmers. Ann.Univ Mariae.Curie Skłodowska [Med] 2003;58(1):459-465. [View abstract](#) **55335**
- Dimpfel, W., Pischel, I., and Lehnfeld, R. Effects of lozenge containing lavender oil, extracts from hops, lemon balm and oat on electrical brain activity of volunteers. Eur.J Med Res 9-29-2004;9(9):423-431. [View abstract](#) **55336**

- Chadwick, L. R., Nikolic, D., Burdette, J. E., Overk, C. R., Bolton, J. L., van Breemen, R. B., Frohlich, R., Fong, H. H., Farnsworth, N. R., and Pauli, G. F. Estrogens and congeners from spent hops (*Humulus lupulus*). *J Nat Prod.* 2004;67(12):2024-2032. [View abstract](#). **55338**
- Heyerick, A., Vervarcke, S., Depypere, H., Bracke, M., and De Keukeleire, D. A first prospective, randomized, double-blind, placebo-controlled study on the use of a standardized hop extract to alleviate menopausal discomforts. *Maturitas* 5-20-2006;54(2):164-175. [View abstract](#). **55339**
- Morali, G., Polatti, F., Metelitsa, E. N., Mascarucci, P., Magnani, P., and Marre, G. B. Open, non-controlled clinical studies to assess the efficacy and safety of a medical device in form of gel topically and intravaginally used in postmenopausal women with genital atrophy. *Arzneimittelforschung* 2006;56(3):230-238. [View abstract](#). **55340**
- Schiller, H., Forster, A., Vonhoff, C., Hegger, M., Biller, A., and Winterhoff, H. Sedating effects of *Humulus lupulus* L. extracts. *Phytomedicine*. 2006;13(8):535-541. [View abstract](#). **55341**
- Hall, A. J., Babisch, J. G., Darland, G. K., Carroll, B. J., Konda, V. R., Lerman, R. H., Bland, J. S., and Tripp, M. L. Safety, efficacy and anti-inflammatory activity of rho iso-alpha-acids from hops. *Phytochemistry* 2008;69(7):1534-1547. [View abstract](#). **55342**
- Yamaguchi, N., Satoh-Yamaguchi, K., and Ono, M. In vitro evaluation of antibacterial, anticollagenase, and antioxidant activities of hop components (*Humulus lupulus*) addressing acne vulgaris. *Phytomedicine*. 2009;16(4):369-376. [View abstract](#). **55343**
- Jakovljevic, V., Popovic, M., Raskovic, A., Sabo, A., and Vasic, R. Effect of aroma and magnum hops extracts and paracetamol on antioxidant liver parameters in mice. *Eur J Drug Metab Pharmacokinet.* 2008;33(4):205-209. [View abstract](#). **55344**
- Takoi, K., Degueil, M., Shinkaruk, S., Thibon, C., Maeda, K., Ito, K., Bennetau, B., Dubourdieu, D., and Tominaga, T. Identification and characteristics of new volatile thiols derived from the hop (*Humulus lupulus* L.) cultivar Nelson Sauvin (dagger). *J Agric Food Chem* 3-25-2009;57(6):2493-2502. [View abstract](#). **55345**
- Chung, W. G., Miranda, C. L., Stevens, J. F., and Maier, C. S. Hop proanthocyanidins induce apoptosis, protein carbonylation, and cytoskeleton disorganization in human colorectal adenocarcinoma cells via reactive oxygen species. *Food Chem Toxicol.* 2009;47(4):827-836. [View abstract](#). **55346**
- Shen, C., Geornaras, I., Kendall, P. A., and Sofos, J. N. Control of *Listeria monocytogenes* on frankfurters by dipping in hops beta acids solutions. *J Food Prot.* 2009;72(4):702-706. [View abstract](#). **55347**
- Jakovljevic, V., Popovic, M., Raskovic, A., Sabo, A., Horvat, O., Mitic, R., and Vasic, R. Effect of aroma and magnum hops extracts and paracetamol on antioxidant liver parameters in mice. *Eur J Drug Metab Pharmacokinet.* 2009;34(1):37-41. [View abstract](#). **55348**
- Van, Cleemput M., Cattoor, K., De, Bosscher K., Haegeman, G., De, Keukeleire D., and Heyerick, A. Hop (*Humulus lupulus*)-derived bitter acids as multipotent bioactive compounds. *J Nat Prod* 2009;72(6):1220-1230. [View abstract](#). **55349**
- Wang, G. and Dixon, R. A. Heterodimeric geranyl(geranyl)diphosphate synthase from hop (*Humulus lupulus*) and the evolution of monoterpane biosynthesis. *Proc Natl Acad Sci U S A* 6-16-2009;106(24):9914-9919. [View abstract](#). **55350**
- Foster, B. C., Kearns, N., Arnason, J. T., Saleem, A., Ogrodowczyk, C., and Desjardins, S. Comparative study of hop-containing products on human cytochrome p450-mediated metabolism. *J Agric Food Chem* 6-10-2009;57(11):5100-5105. [View abstract](#).

- 55351
- Gao, X., Deeb, D., Liu, Y., Gautam, S., Dulchavsky, S. A., and Gautam, S. C. Immunomodulatory activity of xanthohumol: inhibition of T cell proliferation, cell-mediated cytotoxicity and Th1 cytokine production through suppression of NF-kappaB. *Immunopharmacol.Immunotoxicol.* 2009;31(3):477-484. [View abstract](#).
- 55352
- Zanoli, P., Zavatti, M., Rivasi, M., Benelli, A., Avallone, R., and Baraldi, M. Experimental evidence of the anaphrodisiac activity of Humulus lupulus L. in naive male rats. *J Ethnopharmacol.* 8-17-2009;125(1):36-40. [View abstract](#).
- 55353
- Ross, S. M. Sleep disorders: a single dose administration of valerian/hops fluid extract (dormeasan) is found to be effective in improving sleep. *Holist.Nurs Pract* 2009;23(4):253-256. [View abstract](#).
- 55354
- Kornysova, O., Stanius, Z., Obelevicius, K., Ragazinskiene, O., Skrzyliewska, E., and Maruska, A. Capillary zone electrophoresis method for determination of bitter (alpha- and beta-) acids in hop (*Humulus lupulus L.*) cone extracts. *Adv.Med Sci* 2009;54(1):41-46. [View abstract](#).
- 55355
- Lupinacci, E., Meijerink, J., Vincken, J. P., Gabriele, B., Gruppen, H., and Witkamp, R. F. Xanthohumol from hop (*Humulus lupulus L.*) is an efficient inhibitor of monocyte chemoattractant protein-1 and tumor necrosis factor-alpha release in LPS-stimulated RAW 264.7 mouse macrophages and U937 human monocytes. *J Agric Food Chem* 8-26-2009;57(16):7274-7281. [View abstract](#).
- 55356
- Van, Cleemput M., Heyerick, A., Libert, C., Swerts, K., Philippe, J., De, Keukeleire D., Haegeman, G., and De, Bosscher K. Hop bitter acids efficiently block inflammation independent of GRalpha, PPARalpha, or PPARgamma. *Mol Nutr Food Res* 2009;53(9):1143-1155. [View abstract](#).
- 55357
- Konda, V. R., Desai, A., Darland, G., Bland, J. S., and Tripp, M. L. Rho iso-alpha acids from hops inhibit the GSK-3/NF-kappaB pathway and reduce inflammatory markers associated with bone and cartilage degradation. *J Inflamm.(Lond)* 2009;6:26. [View abstract](#).
- 55358
- Caballero, I., Agut, M., Armentia, A., and Blanco, C. A. Importance of tetrahydroiso alpha-acids to the microbiological stability of beer. *J AOAC Int* 2009;92(4):1160-1164. [View abstract](#).
- 55359
- Dumas, E. R., Michaud, A. E., Bergeron, C., Lafrance, J. L., Mortillo, S., and Gafner, S. Deodorant effects of a supercritical hops extract: antibacterial activity against *Corynebacterium xerosis* and *Staphylococcus epidermidis* and efficacy testing of a hops/zinc ricinoleate stick in humans through the sensory evaluation of axillary deodorancy. *J Cosmet.Dermatol* 2009;8(3):197-204. [View abstract](#).
- 55360
- Zhang, N., Liu, Z., Han, Q., Chen, J., and Lv, Y. Xanthohumol enhances antiviral effect of interferon alpha-2b against bovine viral diarrhea virus, a surrogate of hepatitis C virus. *Phytomedicine*. 2010;17(5):310-316. [View abstract](#).
- 55361
- Hartkorn, A., Hoffmann, F., Ajamieh, H., Vogel, S., Heilmann, J., Gerbes, A. L., Vollmar, A. M., and Zahler, S. Antioxidant effects of xanthohumol and functional impact on hepatic ischemia-reperfusion injury. *J Nat Prod* 2009;72(10):1741-1747. [View abstract](#).
- 55362
- Ceslova, L., Holcapek, M., Fidler, M., Drstková, J., and Lisa, M. Characterization of prenylflavonoids and hop bitter acids in various classes of Czech beers and hop extracts using high-performance liquid chromatography-mass spectrometry. *J Chromatogr.A* 10-23-2009;1216(43):7249-7257. [View abstract](#).
- 55363
- Behr, J. and Vogel, R. F. Mechanisms of hop inhibition include the transmembrane redox reaction. *Appl.Environ Microbiol.* 2010;76(1):142-149. [View abstract](#).

55364

Magalhaes, P. J., Vieira, J. S., Goncalves, L. M., Pacheco, J. G., Guido, L. F., and Barros, A. A. Isolation of phenolic compounds from hop extracts using polyvinylpolypyrrolidone: characterization by high-performance liquid chromatography-diode array detection-electrospray tandem mass spectrometry. *J Chromatogr.A* 5-7-2010;1217(19):3258-3268. [View abstract](#).

55365

Chu, H. M., Ko, T. P., and Wang, A. H. Crystal structure and substrate specificity of plant adenylate isopentenyltransferase from *Humulus lupulus*: distinctive binding affinity for purine and pyrimidine nucleotides. *Nucleic Acids Res* 2010;38(5):1738-1748. [View abstract](#).

55367

Dorn, C., Weiss, T. S., Heilmann, J., and Hellerbrand, C. Xanthohumol, a prenylated chalcone derived from hops, inhibits proliferation, migration and interleukin-8 expression of hepatocellular carcinoma cells. *Int J Oncol.* 2010;36(2):435-441. [View abstract](#).

55368

Dorn, C., Kraus, B., Motyl, M., Weiss, T. S., Gehrig, M., Scholmerich, J., Heilmann, J., and Hellerbrand, C. Xanthohumol, a chalcone derived from hops, inhibits hepatic inflammation and fibrosis. *Mol Nutr Food Res* 2010;54 Suppl 2:S205-S213. [View abstract](#).

55369

Chiummariello, S., De, Gado F., Monarca, C., Ruggiero, M., Carlesimo, B., Scuderi, N., and Alfano, C. [Multicentric study on a topical compound with lymph-draining action in the treatment of the phlebostatic ulcer of the inferior limbs]. *G.Chir* 2009;30(11-12):497-501. [View abstract](#).

55370

Erkkola, R., Vervarcke, S., Vansteelandt, S., Rompotti, P., De, Keukeleire D., and Heyerick, A. A randomized, double-blind, placebo-controlled, cross-over pilot study on the use of a standardized hop extract to alleviate menopausal discomforts. *Phytomedicine.* 2010;17(6):389-396. [View abstract](#).

55371

Jirasko, R., Holcapek, M., Vrublova, E., Ulrichova, J., and Simanek, V. Identification of new phase II metabolites of xanthohumol in rat in vivo biotransformation of hop extracts using high-performance liquid chromatography electrospray ionization tandem mass spectrometry. *J Chromatogr.A* 6-18-2010;1217(25):4100-4108. [View abstract](#).

55372

Peluso, M. R., Miranda, C. L., Hobbs, D. J., Proteau, R. R., and Stevens, J. F. Xanthohumol and related prenylated flavonoids inhibit inflammatory cytokine production in LPS-activated THP-1 monocytes: structure-activity relationships and in silico binding to myeloid differentiation protein-2 (MD-2). *Planta Med* 2010;76(14):1536-1543. [View abstract](#).

55373

Cattoor, K., Bracke, M., Deforce, D., De, Keukeleire D., and Heyerick, A. Transport of hop bitter acids across intestinal Caco-2 cell monolayers. *J Agric Food Chem* 4-14-2010;58(7):4132-4140. [View abstract](#).

55374

Strathmann, J., Klimo, K., Sauer, S. W., Okun, J. G., Prehn, J. H., and Gerhauser, C. Xanthohumol-induced transient superoxide anion radical formation triggers cancer cells into apoptosis via a mitochondria-mediated mechanism. *FASEB J* 2010;24(8):2938-2950. [View abstract](#).

55375

Casey, T. R. and Bamforth, C. W. Silicon in beer and brewing. *J Sci Food Agric* 4-15-2010;90(5):784-788. [View abstract](#).

55376

Flesar, J., Havlik, J., Kloucek, P., Rada, V., Titera, D., Bednar, M., Stropnický, M., and Kokoska, L. In vitro growth-inhibitory effect of plant-derived extracts and compounds against *Paenibacillus* larvae and their acute oral toxicity to adult honey bees. *Vet.Microbiol.* 9-28-2010;145(1-2):129-133. [View abstract](#).

55377

Dorn, C., Bataille, F., Gaebele, E., Heilmann, J., and Hellerbrand, C. Xanthohumol feeding does not impair organ function and homoeostasis in mice. *Food Chem Toxicol.* 2010;48(7):1890-1897. [View abstract](#).

55378

Philips, N., Samuel, M., Arena, R., Chen, Y. J., Conte, J., Natarajan, P., Haas, G., and Gonzalez, S. Direct inhibition of elastase and matrixmetalloproteinases and stimulation of biosynthesis of fibrillar collagens, elastin, and fibrillins by xanthohumol. *J Cosmet.Sci* 2010;61(2):125-132. [View abstract](#).

55379

Radovic, B., Hussong, R., Gerhauser, C., Meinl, W., Frank, N., Becker, H., and Kohrle, J. Xanthohumol, a prenylated chalcone from hops, modulates hepatic expression of genes involved in thyroid hormone distribution and metabolism. *Mol Nutr Food Res* 2010;54 Suppl 2:S225-S235. [View abstract](#).

55380

Bolca, S., Li, J., Nikolic, D., Roche, N., Blondeel, P., Possemiers, S., De, Keukeleire D., Bracke, M., Heyerick, A., van Breemen, R. B., and Depypere, H. Disposition of hop prenylflavonoids in human breast tissue. *Mol Nutr Food Res* 2010;54 Suppl 2:S284-S294. [View abstract](#).

55381

Babish, J. G., Pacioretti, L. M., Bland, J. S., Minich, D. M., Hu, J., and Tripp, M. L. Antidiabetic screening of commercial botanical products in 3T3-L1 adipocytes and db/db mice. *J Med Food* 2010;13(3):535-547. [View abstract](#).

55382

Cornu, C., Remontet, L., Noel-Baron, F., Nicolas, A., Feugier-Favier, N., Roy, P., Claustrat, B., Saadatian-Elahi, M., and Kassai, B. A dietary supplement to improve the quality of sleep: a randomized placebo controlled trial. *BMC.Complement Altern Med* 2010;10:29. [View abstract](#).

55383

Salter, S. and Brownie, S. Treating primary insomnia - the efficacy of valerian and hops. *Aust.Fam.Physician* 2010;39(6):433-437. [View abstract](#).

55384

Minich, D. M., Lerman, R. H., Darland, G., Babish, J. G., Pacioretti, L. M., Bland, J. S., and Tripp, M. L. Hop and Acacia Phytochemicals Decreased Lipotoxicity in 3T3-L1 Adipocytes, db/db Mice, and Individuals with Metabolic Syndrome. *J Nutr Metab* 2010;2010. [View abstract](#).

55385

Negrao, R., Costa, R., Duarte, D., Taveira, Gomes T., Mendanha, M., Moura, L., Vasques, L., Azevedo, I., and Soares, R. Angiogenesis and inflammation signaling are targets of beer polyphenols on vascular cells. *J Cell Biochem* 12-1-2010;111(5):1270-1279. [View abstract](#).

55386

Stracke, D., Schulz, T., and Prehm, P. Inhibitors of hyaluronan export from hops prevent osteoarthritic reactions. *Mol Nutr Food Res* 2011;55(3):485-494. [View abstract](#).

55387

Deeb, D., Gao, X., Jiang, H., Arbab, A. S., Dulchavsky, S. A., and Gautam, S. C. Growth inhibitory and apoptosis-inducing effects of xanthohumol, a prenylated chalone present in hops, in human prostate cancer cells. *Anticancer Res* 2010;30(9):3333-3339. [View abstract](#).

55388

Dietz, B. M. and Bolton, J. L. Biological reactive intermediates (BRIs) formed from botanical dietary supplements. *Chem Biol Interact.* 6-30-2011;192(1-2):72-80. [View abstract](#).

55389

Izzo, G., Soder, O., and Svechnikov, K. The prenylflavonoid phytoestrogens 8-prenylnaringenin and isoxanthohumol differentially suppress steroidogenesis in rat Leydig cells in ontogenesis. *J Appl.Toxicol.* 11-9-2010; [View abstract](#).

55390

Lee, I. S., Lim, J., Gal, J., Kang, J. C., Kim, H. J., Kang, B. Y., and Choi, H. J. Anti-inflammatory activity of xanthohumol involves heme oxygenase-1 induction via NRF2-ARE signaling in microglial BV2 cells. *Neurochem.Int* 2011;58(2):153-160. [View abstract](#).

55391

Dhooghe, L., Naessens, T., Heyerick, A., De, Keukeleire D., Vlietinck, A. J., Pieters, L., and Apers, S. Quantification of xanthohumol, isoxanthohumol, 8-prenylnaringenin, and 6-prenylnaringenin in hop extracts and derived capsules using secondary standards. *Talanta* 12-15-2010;83(2):448-456. [View abstract](#).

55392

Lerman, R. H., Minich, D. M., Darland, G., Lamb, J. J., Chang, J. L., Hsi, A., Bland, J. S., and Tripp, M. L. Subjects with elevated LDL cholesterol and metabolic syndrome benefit from supplementation with soy protein, phytosterols, hops rho iso-alpha acids, and Acacia nilotica proanthocyanidins. *J Clin Lipidol.* 2010;4(1):59-68. [View abstract](#).

55393

Yadav, V. R., Prasad, S., Sung, B., and Aggarwal, B. B. The role of chalcones in suppression of NF-kappaB-mediated inflammation and cancer. *Int Immunopharmacol.* 2011;11(3):295-309. [View abstract](#).

55394

Choi, Y., Jermihov, K., Nam, S. J., Sturdy, M., Maloney, K., Qiu, X., Chadwick, L. R., Main, M., Chen, S. N., Mesecar, A. D., Farnsworth, N. R., Pauli, G. F., Fenical, W., Pezzuto, J. M., and van Breemen, R. B. Screening natural products for inhibitors of quinone reductase-2 using ultrafiltration LC-MS. *Anal.Chem* 2-1-2011;83(3):1048-1052. [View abstract](#).

55395

Di, Viesti, V., Carnevale, G., Zavatti, M., Benelli, A., and Zanol, P. Increased sexual motivation in female rats treated with *Humulus lupulus* L. extract. *J Ethnopharmacol.* 3-24-2011;134(2):514-517. [View abstract](#).

55396

Olas, B., Kolodziejczyk, J., Wachowicz, B., Jedrejek, D., Stochmal, A., and Oleszek, W. The extract from hop cones (*Humulus lupulus*) as a modulator of oxidative stress in blood platelets. *Platelets.* 2011;22(5):345-352. [View abstract](#).

55397

Takano, N., Inokuchi, Y., and Kurachi, M. [Effects of ethanol extracts of herbal medicines on dermatitis in an atopic dermatitis mouse model]. *Yakugaku Zasshi* 2011;131(4):581-586. [View abstract](#).

55398

Foster, B. C., Arnason, J. T., Saleem, A., Tam, T. W., Liu, R., Mao, J., and Desjardins, S. Comparative study of hops-containing products on human cytochrome P450-mediated metabolism. *J Agric Food Chem* 5-11-2011;59(9):5159-5163. [View abstract](#).

55399

Jones, J. L., Fernandez, M. L., McIntosh, M. S., Najm, W., Calle, M. C., Kalynych, C., Vukich, C., Barona, J., Ackermann, D., Kim, J. E., Kumar, V., Lott, M., Volek, J. S., and Lerman, R. H. A Mediterranean-style low-glycemic-load diet improves variables of metabolic syndrome in women, and addition of a phytochemical-rich medical food enhances benefits on lipoprotein metabolism. *J Clin Lipidol.* 2011;5(3):188-196. [View abstract](#).

55400

Kligler, B., Homel, P., Blank, A. E., Kenney, J., Levenson, H., and Merrell, W. Randomized trial of the effect of an integrative medicine approach to the management of asthma in adults on disease-related quality of life and pulmonary function. *Altern.Ther.Health Med.* 2011;17(1):10-15. [View abstract](#).

55401

Moreira, M. M., Carvalho, A. M., Valente, I. M., Goncalves, L. M., Rodrigues, J. A., Barros, A. A., and Guido, L. F. Novel application of square-wave adsorptive-stripping voltammetry for the determination of xanthohumol in spent hops. *J Agric Food Chem* 7-27-2011;59(14):7654-7658. [View abstract](#).

55402

Gross-Steinmeyer, K. and Eaton, D. L. Dietary modulation of the biotransformation and genotoxicity of aflatoxin B(1). *Toxicology* 9-28-2012;299(2-3):69-79. [View abstract](#).

55403

Franco, L., Sanchez, C., Bravo, R., Rodriguez, A. B., Barriga, C., Romero, E., and Cubero, J. The sedative effect of non-alcoholic beer in healthy female nurses. *PLoS.One.* 2012;7(7):e37290. [View abstract](#).

55404

van Hunsel, F. P. and Kampschoer, P. [Postmenopausal bleeding and dietary supplements: a possible causal relationship with hop- and soy-containing preparations]. *Ned.Tijdschr.Geneesk.* 2012;156(41):A5095. [View abstract](#).

55405

- Fenselau, C. and Talalay, P. Is oestrogenic activity present in hops? *Food Cosmet. Toxicol.* 1973;11(4):597-602. [View abstract](#). **55406**
- Wohlfart, R., Hansel, R., and Schmidt, H. [The sedative-hypnotic action of hops. 4. Communication: pharmacology of the hop substance 2-methyl-3-buten-2-ol]. *Planta Med* 1983;48(2):120-123. [View abstract](#). **55407**
- Wohlfart, R., Wurm, G., Hansel, R., and Schmidt, H. [Detection of sedative-hypnotic active ingredients in hops. 5. Degradation of bitter acids to 2-methyl-3-buten-2-ol, a hop constituent with sedative-hypnotic activity]. *Arch.Pharm.(Weinheim)* 1983;316(2):132-137. [View abstract](#). **55408**
- Hansel, R., Wohlfart, R., and Coper, H. [Sedative-hypnotic compounds in the exhalation of hops, II]. *Z.Naturforsch.[C.]* 1980;35(11-12):1096-1097. [View abstract](#). **55409**
- Yasukawa, K., Takeuchi, M., and Takido, M. Humulon, a bitter in the hop, inhibits tumor promotion by 12-O-tetradecanoylphorbol-13-acetate in two-stage carcinogenesis in mouse skin. *Oncology* 1995;52(2):156-158. [View abstract](#). **55410**
- Mannering, G. J., Shoeman, J. A., and Shoeman, D. W. Effects of colupulone, a component of hops and brewers yeast, and chromium on glucose tolerance and hepatic cytochrome P450 in nondiabetic and spontaneously diabetic mice. *Biochem Biophys Res Commun* 5-16-1994;200(3):1455-1462. [View abstract](#). **55411**
- Gerhard, U., Linnenbrink, N., Georghiadou, C., and Hobi, V. Vigilanzmindernde Effekte zweier pflazlicher Schlafmittel (Effects of two plant-based sleep remedies on vigilance). *Schweiz.Rundsch.Med.Prax.* 4-9-1996;85(15):473-481. [View abstract](#). **55412**
- Mannering, G. J. and Shoeman, J. A. Murine cytochrome P4503A is induced by 2-methyl-3-buten-2-ol, 3-methyl- 1-pentyn-3-ol(meparfynol), and tert-amyl alcohol. *Xenobiotica* 1996;26(5):487-493. [View abstract](#). **55413**
- Duncan, K. L., Hare, W. R., and Buck, W. B. Malignant hyperthermia-like reaction secondary to ingestion of hops in five dogs. *J Am Vet Med Assoc* 1-1-1997;210(1):51-54. [View abstract](#). **55414**
- Godnic-Cvar, J., Zuskin, E., Mustajbegovic, J., Schachter, E. N., Kanceljak, B., Macan, J., Ilic, Z., and Ebling, Z. Respiratory and immunological findings in brewery workers. *Am J Ind Med* 1999;35(1):68-75. [View abstract](#). **55415**
- Lee KM, Jung JS, Song DK, and et al. Effects of *Humulus lupulus* extract on the central nervous system in mice. *Planta Med* 1993;59(Suppl):A691. **55416**
- Negri, G., Santi, D., and Tabach, R. Bitter acids from hydroethanolic extracts of *Humulus lupulus* L., Cannabaceae, used as anxiolytic. *Revista Brasileira de Farmacognosia* 2010;20(6):850-859. **55417**
- Koetter, U and Biendl, M. HOPS. *HerbalGram* 2010;(87):44-57. **55418**
- Lopez-Jaen, A. B., Codoñer-Franch, P, Martínez-Álvarez, J. R., Villarino-Marín, A, and Valls-Bellés, V. Effect on health of non-alcohol beer and hop supplementation in a group of nuns in a closed order. *Proceedings of the Nutrition Society* 2010;69(OCE3):26. **55419**
- Zenisek A and Bednar IJ. Contribution of the identification of the estrogen activity of hops. *Am Perfumer Arom* 1960;75:61. **55420**
- In: Bradley PR. *British Herbal Compendium*. Bournemouth, Dorset, UK: British Herbal Medicine Association;1992. **55421**

- Stocker HR. Sedative und hypnogene Wirkung des Hopfens. Schweizerische Brauerei-Rundschau 1967;78(4):80-89. **55422**
- European Food Safety Authority. Modification of the existing MRL for acequinocyl in hops. EFSA Journal 2010;8(12) **55423**
- European Food Safety Authority. Reasoned opinion of EFSA: modification of the current MRL for mandipropamid in hops. EFSA Journal 2011;9(2) **55424**
- Samojlov, Y. K., Lemza, V. D, Buchkov, P. P, and Loban, L. L. Biological protection of hop-plant. Progress in Plant Protection 2010;50(4):2013-2016. **55425**
- Komarek, M, Balík, J, Chrastný, V, and Száková, J. DISTRIBUTION AND FRACTIONATION OF COPPER IN CONTAMINATED HOP FIELD SOILS. Fresenius Environmental Bulletin 2009;18(7b):1319-1323. **55426**
- Tamasdan S, Cristea E, and Mihele D. Action upon gastric secretion of Robiniae flores, Chamomilae flores and Strobuli lupuli extracts. Farmacia 1981;29:71-75. **55427**
- Kermanshahi, R. K, Esfahani, B. N, Serkani, J. E, Asghari, G. R, and Babaie, A. A. P. The study of antibacterial effect of Humulus lupulus on some of Gram positive & Gram negative bacteria. Journal of Medicinal Plants 2009;8(30):92-97. **55428**
- Shapouri, R and Rahnema, M. Evaluation of antimicrobial effect of hops extracts on intramacrophages Brucella abortus and B. melitensis. Jundishapur Journal of Microbiology 2011;4(Suppl 1):S51-S58. **55429**
- Hänsel R, Wohlfart R, and Schmidt H. The sedative-hypnotic principle of hops. 3. Communication: contents of 2-methyl-3-butene-2-ol in hops and hop preparations. Planta Med 1982;45:224-228. **55430**
- Marinova, G and Batchvarov, V. Hop and beer polyphenols and their healthiness. Scientific Works of the University of Food Technologies - Plovdiv 2009;56(1):162-168. **55431**
- Mozny, M, Tolasz, R, Nekovar, J., Sparks, T, Trnka, M, and Zalud, Z. The impact of climate change on the yield and quality of Saaz hops in the Czech Republic. Agricultural & Forest Meteorology 2009;149(6/7):913-919.