

## **Scientific Studies of Hops Health Benefits**

Hops has been traditionally used for variety of health benefits that lately has been confirmed through research. Among these health benefits from hops include relaxation and sleep inducer, anti-inflammatory effect, estrogenic effect, antioxidant activity and as an anti-tumor properties.

### **Relaxation and Sleep Inducing Health Benefits of Hops**

The leaves of hops contain chemicals that have sedative effects. These chemicals may be beneficial in relieving anxiety and to induce relaxation and sleep. This has been confirmed by a study published in *Phytomedicine*, 2006 where it has been reported that the ethanolic and CO<sub>2</sub> extracts from hops reduced the locomotor activity and body temperature while increasing the ketamine-induced sleep confirming the central sedative effects of hops.

### **Anti-Inflammatory Health Benefit From Hops**

In a study published in the *Molecular Nutrition and Food Research* Sept 2009 issue, it was reported that hop bitter acids efficiently block inflammation independent of GR $\alpha$ , PPAR $\alpha$ , or PPAR $\gamma$ . The study demonstrated the anti-inflammatory effect of various classes of hop bitter acids (HBA), including alpha-acids (AA), beta-acids (BA), and iso-alpha-acids (IAA), in fibroblasts, which are important players in the inflammatory response. All three studied classes of HBA blocked the tumor necrosis factor alpha (TNF)-induced production of the cytokine IL6, and inhibited the transactivation of the pro-inflammatory transcription factors nuclear factor kappa B (NF-kappaB), activator protein-1 (AP-1), and cAMP-response element-binding protein (CREB). The results concluded that the systemic administration of HBA efficiently inhibited acute local inflammation in vivo.

### **Hops Health Benefits For Menopause Symptoms**

Hops have been found to contain estrogen like chemicals which may be beneficial for medical conditions associated with hormonal changes. In the *Journal Maturitas* issue May 2006, a reported study was made to examine the efficacy of a hop extract enriched in 8-prenylnaringenin (8-PN, the phytoestrogen in hops, *Humulus lupulus* L.) on relief of menopausal discomforts. The results showed that daily intake of a hop extract, standardized on 8-PN as a potent phytoestrogen, exerted favorable effects on vasomotor symptoms and other menopausal discomforts.

### **Anti-Cancer Benefits of Hops**

Hops may provide cancer fighting benefits. The *Phytotherapy Research*, November 2008 edition reported the inhibitory effects of xanthohumol from hops (*Humulus lupulus* L.) on human hepatocellular carcinoma cell lines. In this study, the inhibitory effects of xanthohumol on human hepatocellular carcinoma cell lines were investigated. It was found that hops xanthohumol was more efficient in the growth inhibition of hepatocellular carcinoma cell lines than the flavonoids silibinin and naringin from thistle and citrus. It was shown for the first time that xanthohumol from hops effectively inhibits proliferation of human hepatocellular carcinoma cells in vitro.

### **Anti-Infection Benefits Of Hops**

Chinese medicine has been using hops extract for its anti-infection benefits. Recent studies confirmed this benefit as a review published in the Journal of Molecular Nutrition and Food Research, September 2005, reported that xanthohumol and other constituents in hops act as an anti-infective agent against microorganisms including bacteria, viruses, fungi and malarial protozoa. Xanthohumol in hops was shown to inhibit the Gram-positive bacteria *Staphylococcus aureus* and *Streptococcus mutans*. Antiviral activity was demonstrated against bovine viral diarrhoea virus, cytomegalovirus, herpes simplex virus type 1 and 2 and human immunodeficiency virus 1. Inhibition of two *Trichophyton* spp. was indicative of antifungal activity. Finally, xanthohumol potently inhibited the replication of *Plasmodium falciparum*, the causative agent of malaria. This effect was linked to the inhibition of glutathione-mediated degradation and detoxification of haemin, a by-product of the parasitic digestion of haemoglobin. Overall, these activities further contribute to the broad spectrum of biological effects observed with xanthohumol.

### **Anti HIV-1 Viral Activity of Hops**

Antiviral Research. December 2004 reported that Xanthohumol, may be a novel anti-HIV-1 agent purified from Hops *Humulus lupulus*. It was further reported that xanthohumol inhibited HIV-1 induced cytopathic effects, the production of viral p24 antigen and reverse transcriptase in C8166 lymphocytes at non-cytotoxic concentration. Xanthohumol also inhibited HIV-1 replication in PBMC with EC50 value of 20.74 microg/ml. The results from this study suggested that xanthohumol is effective against HIV-1 and might serve as an interesting lead compound. It may represent a novel chemotherapeutic agent for HIV-1 infection. However, the mechanism of its anti-HIV-1 effect needs to be further clarified.

### **Anti-Acne Benefits From Hops**

Phytomedicine. April 2009 reported an in vitro evaluation of antibacterial, anticollagenase, and antioxidant activities of hop components (*Humulus lupulus*) addressing acne vulgaris. In this study, seven naturally derived components from hop plant (*Humulus lupulus* L.) extracts were tested for evaluation of biological activities affecting acne vulgaris. Five strains, *Propionibacterium acnes*, *Staphylococcus epidermidis*, *Staphylococcus aureus*, *Kocuria rhizophila* and, *Staphylococcus pyogenes*, were selected as the main acne-causing bacteria. Hop extracts xanthohumol and the lupulones showed strong inhibitory activities against all of the strains. Antioxidant capacity was also evaluated with seven different methods based on different reactive oxygen species. Xanthohumol showed the highest activity in total oxygen radical absorbance capacity as well as singlet oxygen absorbance capacity.

### **Weight Loss Benefits From Hops**

The Journal of Phytochemistry (May 2012) reported that xanthohumol a flavonoid from hops lowers body weight and fasting plasma glucose in obese male Zucker fa/fa rats. In this study xanthohumol, a prenylated flavonoid from hops (*Humulus lupulus*), was tested for efficacy on biomarkers of metabolic syndrome in 4week old Zucker fa/fa rats, a rodent model of obesity. Results have shown that there was a dose-dependent effect on body weight and plasma glucose levels. The highest dose group had significantly lower

plasma glucose levels compared to the control group in male but not female rats. There was also a significant decrease in body weight for male rats in the highest dose group (16.9mg/kg BW) compared to rats that received no xanthohumol, which was also not seen for female rats. Plasma cholesterol, insulin, triglycerides, and MCP-1 as well as food intake were not affected by treatment. The findings suggest that xanthohumol has beneficial effects on markers of metabolic syndrome.

### **Hops Antiplatelet Activity Benefits Cardiovascular Diseases.**

The Journal of Evidence-based Complementary and Alternative Medicine (May 2012), reported that xanthohumol, a prenylated flavonoid from hops (*Humulus lupulus*), prevents platelet activation in human platelets. This study demonstrates for the first time that xanthohumol possesses potent antiplatelet activity which may initially inhibit the PI3-kinase/Akt, p38 MAPK, and PLC $\gamma$ 2-PKC cascades, followed by inhibition of the thromboxane A(2) formation, thereby leading to inhibition of [Ca(2+)](i) and finally inhibition of platelet aggregation. Therefore, this novel role of xanthohumol may represent a high therapeutic potential for treatment or prevention of cardiovascular diseases.

### **Health Benefits Of Hops For Chronic Liver Diseases**

The Journal of Experimental and Molecular Pathology (April 2012) reported a study that hop bitter acids exhibit anti-fibrogenic effects on hepatic stellate cells in vitro. The aim of this study was to investigate the effect of BA on hepatic stellate cells (activation) and their potential to inhibit molecular processes involved in the pathogenesis of hepatic fibrosis. The findings indicate that bitter acid inhibit NF $\kappa$ B activation, and herewith the activation and development of profibrogenic phenotype of hepatic stellate cells. Thus, bitter acids appear as potential functional nutrients for the prevention or treatment hepatic fibrosis in chronic liver disease.

### **How to Take Hops Medicine**

Hop tea can be prepared by adding 2 teaspoon of hop parts for every cup of boiling water letting it steep for 5 minutes before drinking.

Children: Not recommended for children.

Adults: Follow the directions given by your medical adviser..

### **Hops Side Effects and Warnings**

Hop is considered safe for most adults when taken at recommended dosage.

However, this does not constitute that drinking beer which contains hops is likely safe.

Beer contains alcohol which may have different effect to every person.

While hops may have a lot of health benefits, hops use may also cause minor side effects such as diarrhea, upset stomach, vomiting and at some extent seizure.

Hop is not recommended for pregnant and breast feeding mothers.

Hop is not to be used by very young children.

Hop may aggravate symptoms of depression.

Frequent contact to hop plant may cause rash called hop dermatitis.

*Medical Health Guide* (medicalhealthguide.com),  
<http://www.medicalhealthguide.com/herb/hops.htm>