

Quellennachweis / Literature

Astaxanthin

Literatur: Satoh, A., Tsuji, S., Okada, Y., Murakami, N., Urami, M., Nakagawa, K., Ishikura, M., Katagiri, M., Koga, Y., Shirasawa, T. (2009) «Preliminary Clinical Evaluation of Toxicity and Efficacy of a New Astaxanthin rich Haematococcus pluvialis Extract». *Journal of Clinical Biochemistry and Nutrition*, 2009;44(3):280-4. Nakagawa, K., Kiko, T., Miyazawa, T., Carpennero Burdeos, G., Kimura, F., Satoh, A., Miyazawa, T. (2011) «Antioxidant effect of Astaxanthin on phospholipid peroxidation in human erythrocytes». *British Journal of Nutrition*, 2011: Jan 31:1-9. Liu, X., Osawa T. (2009) "Astaxanthin Protects Neuronal Cells against Oxidative Damage and is a Potent Candidate for Brain Food." *Forum Nutr. Basel, Karger*, 2009, vol 61, pp 129-135.

Curcuma-Extrakt

Literatur: Panahi Yet af.: *Phytother Res.* 2014 Nov;28(11):1625-31. Kuptniratsaikuf V et al.: *Clin Interv Aging.* 2014 Mar 20; 9:451-8. Noorafshan A et al, 2013;19(11):2032-46: A review of therapeutic effects of curcumin; *Gurr Pharm Res.* Li S, Yuan W, Deng G, Wang P, Yang P, Aggarwal 88: Chemical composition and product quality control of turmeric (*Curcuma longa* L.). *Pharmaceutical Crops* 2:28-54 (2011). Yue GGL, Chan BCL, Hon PM, et al. Evaluation of in vitro anti-proliferative and immunomodulatory activities of compounds isolated from *Curcuma longa*, *Food Chem Toxicol*, 2010 ,48:20 11-20 (2010). Lantz RC, Chen GJ, Solyom AM, et al. The effect of turmeric extracts on inflammatory mediator production, *Phytomedicine*, 2005, 12:445-52. Menon V, Sudheer A. Antioxidant and anti-inflammatory properties of curcumin. *Adv. Exp. Med. Biol.* 595:105 (2007). Madhu K, Chanda K, Saji MJ; Safety and efficacy of *Curcuma longa* extract in the treatment of painful knee osteoarthritis: a randomized placebo-controlled trial. Schaffer, Moshe a, b, c; Schaffer, Pamela M. c,d; Bar-Sela, Gile. An update on *Curcuma* as a functional food in the control of cancer and inflammation; *Current Opinion in Clinical Nutrition & Metabolic Care*: November 2015-Volume 18-Issue 6-p 605-611.

*Journal of Psychopharmacology*26(12) 1512–1524; Multiple antidepressant potential modes of action of curcumin: a review of its anti-inflammatory, monoaminergic, antioxidant, immunomodulating and neuroprotective effects Adrian L Lopresti¹, Sean D Hood² and Peter D Drummond¹

Published online in Wiley Online Library, (wileyonlinelibrary.com) doi.org/10.1002/ptr.4639 Binu Chandran¹ and Ajay Goel², First published: 09 March 2012, ¹Nirmals Medical Centre, Muvattupuzha, Kerala, India. ²Baylor Research Institute and Sammons Cancer Center, Baylor University Medical Center, Dallas, TX, USA. A Randomized, Pilot Study to Assess the Efficacy and Safety of Curcumin in Patients with Active Rheumatoid Arthritis. Curcumin is known to possess potent anti-inflammatory and antiarthritic properties. This pilot clinical study evaluated the safety and effectiveness of curcumin alone, and in combination with diclofenac sodium in patients with active rheumatoid arthritis (RA). Forty-five patients diagnosed with RA were randomized into three groups with patients receiving curcumin (500 mg) and diclofenac sodium (50 mg) alone or their combination. The primary endpoints were reduction in Disease Activity Score (DAS) 28. The secondary endpoints included American College of Rheumatology (ACR) criteria for reduction in tenderness and swelling of joint scores. Patients in all three treatment groups showed statistically significant changes in their DAS scores. Interestingly, the curcumin group showed the highest percentage of improvement in overall DAS and ACR scores (ACR 20, 50 and 70) and these scores were significantly better than the patients in the diclofenac sodium group. More

importantly, curcumin treatment was found to be safe and did not relate with any adverse events. Our study provides the first evidence for the safety and superiority of curcumin treatment in patients with active RA, and highlights the need for future large-scale trials to validate these findings in patients with RA and other arthritic conditions. Copyright © 2012 John Wiley & Sons, Ltd.

Glucosaminsulfat und Chondroitinsulfat

Literatur: Vangsness CT Jr et al, A review of evidence-based medicine for glucosamine and chondroitin sulphate use in knee osteoarthritis, *Arthroscopy*, 2009 Jan, 25 (1): 86-94. Gallagher B. et al. Chondroprotection and the prevention of osteoarthritis progression of the knee. *Am J Sports Med* 2015; 43(3) 734-744; Zeng C et al.: Effectiveness and safety of glucosamine, chondroitin, the two in combination, or celecoxib in the treatment of osteoarthritis of the knee. *Scientific reports*, Nov 2015; 5-16827. WVW.nature.com/scientific-reports.

Kollagen-Hydrolysat

Literatur: Oesser S., Seifert J: Stimulation of type II collagen biosynthesis and secretion in bovine chondrocytes cultured with degraded collagen. *Cell Tissue Res.* 2003; 311:393-9 Oesser S, Adam M, Babel W. Seifert J: Oral administration of (14) C labelled gelatine hydrolysate leads to an accumulation of radioactivity in cartilage of mice (C57/BL). *J. Nutr.* 1999; 129:1891-95, Carpenter M et al.: Collagen hydrolysate supplementation improve symptoms in patients with severe Osteoarthritis. *Med. & Science in Sports & Exercise*, 2005; 37:91-92, P. Benito-Ruiz et al: A randomized controlled trial on the efficacy and safety of a food ingredient, collagen hydrolysate, for improving joint comfort. *Int Journal of Food Sciences and Nutrition*, August 2009; 60 (S2): 99-113.

Vitamine: C, E, D, K2; Oligoelemente: Mn, Cu, Zn, Se & Silicium; Antioxidantien: Ingwer, Traubenkern-Extrakt

Literatur: The antioxidant vitamins A, C, E and selenium in the treatment of arthritis: a systematic review of randomized clinical trials. *Oxford Journals, Medicine & Health Rheumatology* Volume 46, Issue 8 Pp. 1223-1233. Fiebich B. et al., Beitrag von Kupfer und Mangan zur anti-entzündlichen Wirkung von Nährstoffkombinationen mit Glucosamin- und Chondroitinsulfat, *Ernährung & Medizin*. 2007; 22: 75-79.