

## 1.1 Literatur über Schwermetallentgiftung und Chlorella

(zusammengestellt von Dietrich Klinghardt MD, PhD bis 2008)

Verwenden und verordnen Sie ausschließlich die empfohlene, reine Chlorella von BioPure US/Europe. Es hat mit anderen Produkten Schwierigkeiten gegeben.

### 1.1.1 Sicherheit von Chlorella

- 500 Gramm Chlorella per day in experiment without serious side effects except bloatedness (Algae Feeding in Humans R.Powell et al, J of Nutrition 75: 61, pg 7-12). Exempt in Japan from necessity of further safety studies
- NIN report: no LD 50 in rats
- South Korea: 4000 tons of chlorella used annually by humans without reports of worrisome side effects
- Over 10 Million people take chlorella as daily supplement (ref 335) – Mason R: Altern Compl Therap, 2001;7 (3):161-165

### 1.1.2 Chlorella und Metallentgiftung

#### Uran

- Horikoshi, T./ Nakajima, A., et al.: Uptake of uranium by various cell fractions of chlorella vulgaris. Radioisotopes 28: 485-488, 1979
- Nakajima, A; Horikoshi, T; Sakagushi, T.: Recovery of uranium by immobilised micro-organisms. Evr. J. Appl. Microbiol. Biotech, 16: 88-91, 1982.

#### Blei

- Protective effects of chlorella vulgaris in lead exposed mice infected with Listeria monocytogenes M.Queiroz et al International Immunopharmacology 3 (2003) 889-900

#### Cadmium

- Hagino et al.: Effect of chlorella on fecal and urinary cadmium excretion in Itai-itai. Jap. J. Hyg. 30: 77, 4/1975
- Nagano, T./Suketa, Y., et al.: Absorption and excretion of chlorella ellipsoidea cadmium-binding protein and inorganic cadmium in rats. Jpn. J. Hyg., 38: 741-747, 1983
- Carr, H.P., Carino, F.A., et al.: Characterization of the cadmium-binding capacity of chlorella vulgaris. Bull. Environ. Contam. Toxicol., 60: 433-440, 1998

#### Quecksilber

- Shieh, Y.J.; Barger, J: Uptake of mercury by chlorella and its effect on potassium regulation. *Planta*, 109: 49-60, 1973
- Klinghardt, D.: Algenpräparat hilfreich bei der Amalgamausleitung, *Erfahrungsheilkunde* Band 48, Heft 7, Juli 1999
- D.Klinghardt and J. Mercola: Mercury toxicity and systemic elimination agents D.Klinghardt and J. Mercola, *J of Nutritional and environmental Medicine* (2001) 11, 53-62
- *Parachlorella beyerinckii* CK-5 is found to accelerate excretion of methylmercury both into feces and urine: "Japan Society for Bioscience, Biotechnology and Agro-chemistry"(JSBBA: <http://www.jsbba.or.jp>) Meeting in Nagoya City, Japan, March 29~30, 2008 .
- Ben-Basset, D.; Mayer, A.M.: Reduction of mercury chloride by chlorella: Evidence for a reducing factor. *Physiol. Pl.*, 40, 157-162, 1977).
- Krisenon J: Inauguraldissertation (=PhD thesis) Fachbereich Chemie Universitaet GH Essen, 2002: Chlorella and CVE remove mercury, tin, antimonum, bismuth and arsenic (toxins) from the bloodstream and from the oral cavity

### **1.1.3 Traditionelle Verwendung von Chlorella, um nach Umweltkatastrophen Leben zu retten**

- Nishijo et al: *Toxicol Letters* 1999; 108 (2-3): 321-7
- Iwata K et al, *Tohoku J Exp Med* 1991; 164(2):93-102
- Prof Lin, Ichiumura S: *Rept Chlorella Res* 1973, p 195 (only in Japanese)
- Hagino N et al: *Nippon Eiseigaku Zasshi*, 1975 ;30 (1):77

### **1.1.4 CVE (Chlorella vulgaris Extrakt): Behandlung von Infektionen des Verdauungstraktes (Listerien, pathogene E.Coli und CMV) und Bleivergiftung**

- Hasegawa, T./ Okuda, M./ Nomoto, K., et al.: Augmentation of the resistance against *Listeria monocytogenes* by oral administration of hot water extract of *chlorella vulgaris* in mice. *Immunopharmacology and Immunotoxicology*, 16(2): 191-202, 1994
- Queiroz, M. et al: Protective effects of *chlorella vulgaris* extract (CVE) in lead-exposed mice infected with *Listeria monocytogenes* . *Int Immunopharmacol* 2003, Jun 3(6): 889-900

### **1.1.5 Chlorella in der Krebstherapie**

- Komiyama, K.: Hirokawa, Y.; Mocota, T., et al: An acidic polysaccharide chlon A, from *chlorella pyrenoidosa*. Anti-tumour activity and immunological response, *Chemotherapy*, 34: 302-307, 1986.

- Konishi, F.; Tanaka, K. ; Himeno, K., et al: Anti-tumour effect induced by a hot water extract of chlorella vulgaris: Resistance to meth-A tumour growth mediated by CE-induced polymorphonuclear leucocytes. *Cancer Immunology and Immunotherapy*, 19 : 73-78, 1985.
- Kuniaki, T.; Yoshifumi, T.; Tsuruta, M. et al: Oral administration of chlorella vulgaris augments concomitant anti-tumour immunity. *Immuno-pharmacology and Immunotoxicology*, 12 (2): 277-291, 1990.
- Miyazawa, Y.; Murayama, T.; Ooya, N. et al: Immunomodulation by unicellular green algae (chlorella pyrenoidosa) in tumour-bearing mice. *Journal of Ethnopharmacology*, 24, 135-146, 1988.
- Tanaka, K.; Konishi, F.; Himeno, K: Augmentation of anti-tumour resistance by a strain of unicellular green algae, chlorella vulgaris. *Cancer Immunology and Immunotherapy*, 17: 90-94, 1984. 83
- Merchant, R.E.; Rice, C.C.; Young, H.F.: Dietary chlorella pyrenoidosa for patients with malignant glioma: Effects on immunocompetence, quality of life, and survival. *Phytotherapy Research*, Vol. 4, No. 6, 220-230, 1990.)

### **1.1.6 Chlorella und die Entgiftung von Chemikalien**

- Effect of chlorella pyrenoidosa on fecal excretion and liver accumulation of polychlorinated dibenzo-p-dioxin in mice *Chemosphere* 2005;59 297-304
- Pore, R.S.; Detoxification of chlordecone poisoned rats with chlorella and chlorella-derived sporopollenin. *Drug. Chem. Toxicol*, 7: 57-71, 1984
- Urey, J.C., et al.: Bioconcentration of four pure PCB Isomers by chlorella pyrenoidosa. *Bull. Envir. Contam. Toxicol* 16: 81-85, 1976
- Morita, K., Matsueda T., Iida, T., Hasegawa, T.: Chlorella accelerates dioxin excretion in rats. *Journal of nutrition* 129 (9): 1731-6, 1999
- Kunimasa M., Masahiro O., Hasegawa, T.: Chlorophyll derived from chlorella inhibits dioxin absorption from the gastrointestinal tract and accelerates dioxin excretion in rats. *Environmental Health Perspectives* 109: 289, 2001
- Nick, G. : *Nutr J* 2006 Jun 8;5:16 Addressing human exposure to environmental toxins with chlorella Pyrenoidosa.
- Also in: *Townsend Letter for Doctors and Patients*. Apr 2003. (237), 28-32.

### **1.1.7 Chlorella als umfassender Nährstoff**

- Over 10 Million people take chlorella as daily supplement (ref 335) – Mason R: *Altern Compl Therap*, 2001;7 (3):161-165
- Tamiya, N., et al.: Preliminary experiments in the use of chlorella as human food. *Food Technology* Vol. VIII, 4: 179-182, 1954),

- CGF - optimal facial development, optimal skeletal growth and development of intelligence:
- Yamagishi, Y., et al.: School children's growth and the value of chlorophyll. Nihon Iji Shimpo, S. 2196, 1961 (in Japanese)
- R.Pratt et al :Production of thiamine, riboflavin, folic acid and biotin by chlorella vulgaris und chlorella pyreneidosa J of Pharmaceutical Sciences Vol 54, No.6, June 1965: chlorella contains significant amounts of: Vit B2, B3, methyl B12, D-3, Vit K, Vit C, Vit E, beta carotene and other carotinoids, all essentiell aminoacids, magnesium, iron, potassium, chlorophyll
- Tokuyasu, M.: Examples of diets for infant's and children's nutritional guidance, and their effects of adding chlorella and C.G.F. to food schedule. Totori City, Japan: Conference proceedings at the nutritional Illness Counseling Clinic 1983, siehe auch: Jpn. J. Nutr. 41(5): 275-283, (1980 u.) 1983)
- Merchant, R., Andre, C.: A review of recent clinical trials of the nutritional supplement chlorella pyrenoidosa in the treatment of fibromyalgia, hypertension, and ulcerative colitis. Alternative Therapies 7: 79, 2001)

### **1.1.8 Die Chlorellamembran: Inhaltsstoffe und Fähigkeiten**

- Bohumil Voelsky: Biosorption of Heavy Metals. CRC Press, 1990: several papers on the cell wall of chlorella. It contains: Hemizellulose A and B, C. P membrane contains Sporopollenin, not C.V, carotenoids, polyphenols and more
- Ben-Basset,D.; Mayer, A.M.: Reduction of mercury chloride by chlorella: Evidence for a reducing factor. Physiol. Pl., 40, 157-162, 1977).

### **1.1.9 Schwangerschaft und Stillen: Reduktion des Toxintransfers**

- S.Nakano et al: Maternal-fetal distribution and transfer of dioxins in pregnant women in Japan, and attempts to reduce maternal transfer with Chlorella (Chlorella pyrenoidosa) supplements Chemosphere, April 2005
- Shiro Nakano et al: Chlorella Pyreneidosa supplementation decreases Dioxin and increases Immunoglobulin A concentrations in breast milk J Med Food 10 (1) 2007, 134-142).

### **1.1.10 Chlorella senkt Lipide**

- A hot water extract of chlorella pyreneidosa reduces body weight and serum lipids in ovariectomized rats S.Hidaka et al Phytotherapy Research 18 (2004) 164-168
- Effect of Chlorella on the level of serum cholesterol in rats C-J Wang et al, J Formosan Med Assoc 80 (1981) 929-933)

### **1.1.11 Chlorella und der Verdauungstrakt (Colitis, Reizdarm, Metallbindung)**

- Merchant, Altern Ther Health Med. 2001 May-Jun;7(3):79-91.
- Merchant, R. & Andre, C. Dietary supplementation with chlorella pyrenoidosa produces positive results in patients with cancer or suffering from certain common chronic illnesses. Townsend Letter for Doctors and Patients. Feb 2001. (211), 74-80.

### **1.1.12 Nucleotide (CGF/CVE Chlorella Extrakte) und IBS (Reizdarmsyndrom)**

- Nucleotide supplementation: a randomised double-blind placebo controlled trial of IntestAidIB in people with Irritable Bowel Syndrome [ISRCTN67764449]. (Significant improvement over placebo), Volltext: <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1513247&blobtype=pdf>
- Dancy CP, Attree EA, Brown KF, Chlorophyll from chlorella binds toxic metals in the gut:
- Yun CH et al: Micros Res Tech 1997; 36(4): 313-23), Kensler TW et al: ibidem
- Sporopollenin from chlorella attaches itself to toxins in the intestinal mucosa and is excreted in this form together with the toxin (ref 233 pg 96): Pore, RS – Drug Chem Toxicol, 1984;7(1):57-71

### **1.1.13 Gebrauch von Chlorella zur Toxin-Entgiftung**

- Guzelian PS, Z Gastroenterologie, 1984; 22:16-20, symptoms of toxicity reduced (ref 28): Biesalski HK et al: Ernährungsmedizin 1999, Thieme Verlag, Stuttgart, Germany)
- Ray, T. The mitigation of methyl mercury vapor inhalation and exhalation in people with dental amalgam fillings. Townsend Letter for Doctors and Patients. Nov 2002. (232), 86-88. *In dieser Studie wird ein Vapor-Analyzer verwendet, um nachzuweisen, dass "nanonisierte" Chlorella (Matrix Metals) und reguläre Chlorella Quecksilber binden.*

### **1.1.14 Englische Veröffentlichungen Dr. Klinghardts, MD,PhD, die maßgebliche Referenzen über den Gebrauch von Chlorella in Entgiftungsprogrammen enthalten**

- Klinghardt, D. Amalgam/mercury detox as a treatment for chronic viral, bacterial, and fungal illnesses. J Explore! 1997. V. 8, (3).
- Klinghardt, D. The five levels of healing. J Explore! 2005. V. 14, (4).
- Klinghardt, D. Metal toxicity. J Explore! 2000. V. 10 (1).
- Mercola, J. & Klinghardt, D. Mercury toxicity and systemic elimination agents. Journal of Nutritional and Environmental Medicine. 2001. V. 11, 53-62.

- Klinghardt, D Chlorella – Erfahrungsheilkunde 1999;7:435-438
- Klinghardt, D Lecture at the ETH in Zurich: Heavy Metal Toxicity Update (with full discussion on chlorella), Oct 31, 2001 –available on video

Referenzen über die Fähigkeit von Chlorella, Gold- und Quecksilber zu entgiften, finden Sie im Buch: “The Biosorption of Heavy Metals”; Volesky B, CRC press 1990