Chlorella


CGF - optimal facial development, optimal skeletal growth and development of intelligence:


CGF in adults: hGH (human Growth hormone):

Chlorella in cancer therapy


CVE: infections and lead

- CVE: treatment of intestinal infections (Listeria, pathogenic e.coli and CMV) and lead toxicity:

Protective effects of Chlorella vulgaris extract (CVE\textsuperscript{3}) in lead-exposed mice infected with Listeria monocytogenes

Queiroz ML, Rodrigues AP, Bincoletto C, Figueiredo CA, Malacrídia S. Departamento de Farmacologia/Hemocentro, Faculdade de Ciencias Medicas, Universidade Estadual de Campinas (UNICAMP), C.P. 6111, CEP 13083-970, SP, Campinas, Brazil. mlsq@fcm.unicamp.br *Int Immunopharmacol* 2003 Jun;3(6):889-900

Chlorella vulgaris extract (CVE) was examined for its chelating effects on the myelosuppression induced by lead in Listeria monocytogenes-infected mice. The reduction in the number of bone marrow granulocyte-macrophage progenitors (CFU-GM) observed after the infection was more severe in the groups previously exposed to lead. Extramedullar hematopoiesis, which was drastically increased after the infection, was not altered by the presence of lead. Treatment with CVE, given simultaneously or following lead exposure, restored to control values the myelosuppression observed in infected/lead-exposed mice and produced a significant increase in serum colony-stimulating activity. The benefits of the CVE treatment were also evident in the recovery of thymus weight, since the reduction produced by the infection was further potentiated by lead exposure. The efficacy of CVE was evident when infected and infected/lead-exposed mice were challenged with a lethal dose of L. monocytogenes after a 10-day treatment with 50 mg/kg CVE/day, given simultaneously to the exposure to 1300 ppm lead acetate in drinking water. Survival rates of 30\% for the infected group and of 20\% for the infected/lead-exposed groups were observed. Evidence that these protective effects of CVE are partly due to its chelating effect was given by the changes observed in blood lead levels. We have observed in the group receiving the CVE/lead simultaneous exposure a dramatic reduction of 66.03\% in blood lead levels, when compared to lead-exposed nontreated control. On the other hand, CVE treatment following lead exposure produced a much less effective chelating effect. CVE treatments for 3 or 10 days, starting 24 h following lead exposure, produced a reduction in blood lead levels of 13.5\% and 17\%, respectively, compared to lead-exposed nontreated controls. The significantly better response observed with the simultaneous CVE/lead administration indicates that the immunomodulation effect of CVE plays an important role in the ability of this algae to reduce blood lead levels. In this regard, additional experiments with gene knockout C57BL/6 mice lacking a functional IFN-gamma gene demonstrated that this cytokine is of paramount importance in the protection afforded by CVE. The antibacterial evaluation measured by the rate of survival demonstrated that, in face of a 100\% survival in the control group composed of normal C57BL/6 mice, which are resistant to L. monocytogenes, we observed no protection whatsoever in the IFN-gamma knockout C57BL/6 mice treated with CVE and inoculated with L. monocytogenes.

PMID: 12781705 [PubMed - in process]
Chlorella Safety

- 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
Chlorella membrane

- (Bohumil Voelsky: Biosorption of Heavy Metals. CRC Press, 1990)
- Hemizellulose A and B
- C. P membrane contains Sporopollenin, not C.V
- Membrane contains carotenoids, polyphenols and more
Chlorella and Metal Binding

Cadmium


Uranium


Lead

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

Mercury


Klinghardt,D. :Algenpraeparat hilfreich bei der Amalgamausleitung

Erfahrungsheilkunde Band 48, Heft 7, Juli 1999


Parachlorella beyerinckii CK-5 is found to accelerate excretion of methyl-mercury 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.
Chlorella and Chemical Detox


The Randall Merchant PhD Studies


Chlorella in pregnant and breastfeeding mothers

- Effect of chlorella pyreneidosa on fecal excretion and liver accumulation of polychlorinated dibenzo-p-dioxin in mice
  Chemosphere 2005;59  297-304

- Maternal-fetal distribution and transfer of dioxins in pregnant women in Japan, and attempts to reduce maternal transfer with Chlorella (Chlorella pyrenoidosa) supplements
  S.Nakano et al  Chemosphere, April 2005

- Chlorella Pyreneidosa supplementation decreases Dioxin and increases Immunoglobulin A concentrations in breast milk
Chlorella optimizes lipids


“Removal and preconcentration of inorganic and methyl mercury from aqueous media using a sorbent prepared from the plant Coriandrum sativum”

D. Karunasagar*, M.V. Balarama Krishna, S.V. Rao, J. Arunachalam

(National Center for Compositional Characterization of Materials (CCCM), Bhabha Atomic Research Centre)

Preventative Effects of Chinese Parsley on Aluminum Deposits in ICR Mice

Acupuncture & Electro-Therapeutics Research 28 (1/2) 1-44 (2003)

Preventive Effect of Chinese Parsley (Coriandrum sativum, Cilantro) on Aluminum Deposition in ICR Mice

Shigeo FUKUDA Ph.D., Shinoei USHIO Ph.D. and Masashi KUREMOTO Ph.D.
Amuse Institute and Fujisaki Institute, Hayashiara Biochemical Laboratories Inc., Okayama, Japan

Yasuhito SHIMOTSUURA, M.D., F.C.A.E., Cert. G.R.T.-MD (5 Dan)
O-Ring Test Life Science Research Institute & Shimotsuura Clinic, Kurume, Fukuoka, Japan

Director of Medical Research, Heart Disease Research Foundation; President, International College of Acupuncture & Electro-Therapeutics; Professor, Dept. of Non-Orthodox Medicine, Ukrainian National Medical University, Kiev, Ukraine; Adjunct Professor, Dept. of Community and Preventive Medicine, New York Medical College

ABSTRACT

Purpose: Environmental exposure to Al may present a serious risk to human because it is the most abundant metal in the Earth's crust. It induces disturbances in the functions of the nervous, osseous and erythropoietic systems (1).

Dr. Omura discovered that the accumulation of mercury in tissues, particularly in cell nucleus, may be one of the main causes of cancer and he found that these metal deposits can be removed by using Chinese parsley and Omura's Selective Drug Uptake Enhancement Method (2-5). We previously reported about the scavenging effect of Chinese parsley on localized lead deposition in animal model (6). In this report, the preventive effect of Chinese parsley on aluminum (Al) deposition in male ICR mice exposed to Al is described.

Materials and Methods: Seven weeks old ICR male mice were exposed to 1000 ppm Al as Al chloride in drinking water for 39 days. Administration of Chinese parsley to mice by gastric intubation was performed for 25 days from 14 days after beginning of Al exposure to the end of experiment.

After 39 days, the mice were sacrificed for the comparison of Al distribution. The localized Al in various tissues was analyzed by kinetic differentiation mode of HPLC.

Results: The total dose of Al given to each experimental group of mice was approximately 200mg. During the experimental period, all the animals gained weight and no differences were found. There were no symptoms of neurotoxicity or other abnormalities. After Al exposure, Al was found to accumulate in the brain, kidney and femur. The highest concentration of Al was observed in the femur. Localized Al deposition in brain was significantly decreased by the administration of Chinese parsley.
Cilantro, metals and EMF sensitivity

- Preliminary research data from Margaretha Griesz-Brisson MD, PhD
## Metal ions in urine and hair before and after cilantro provokation

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<th>Urine pre-</th>
<th>Urine post</th>
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<td>Se-, Ca+, Pb+, Cd+, Ni+</td>
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<td>Se-, Fe+, Cu+, Mn+, Ca+, Cd+, Ni+, Li+</td>
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</table>

Saturday, 11 September 2010
Toxic metal ions in urine and hair after provocation with a single dose of 15 drops energized cilantro tincture
Essential mineral ions in hair and urine after cilantro provocation

Saturday, 11 September 2010
Percentage of patients

with hypersensitivity to heavy metals

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<thead>
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<th>Metal</th>
<th>Percentage</th>
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<tr>
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<td>60.0%</td>
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<tr>
<td>Au</td>
<td>45.0%</td>
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<tr>
<td>Hg</td>
<td>30.0%</td>
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<tr>
<td>Pd</td>
<td>15.0%</td>
</tr>
<tr>
<td>Ag</td>
<td>10.0%</td>
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<tr>
<td>Mo</td>
<td>5.0%</td>
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Percentage of patients with genetic polymorphisms of GST-T1 and GST-M1

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<th>Electro-sensitive patients</th>
<th>Average population</th>
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<tr>
<td>GST T1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GST M1</td>
<td>0%</td>
<td>52.5%</td>
</tr>
<tr>
<td>GST T1 &amp; GST M1</td>
<td></td>
<td>17.5%</td>
</tr>
</tbody>
</table>

Saturday, 11 September 2010