

Nutritional and Health Benefits of

Garlic as a Supplement

C O N F E R E N C E

November 14-17, 1998

Newport Beach, Marriot
Newport Beach, California
United States

Recent Advances on the Nutritional Benefits Accompanying the Use of Garlic as a Supplement

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1998 International Garlic Symposium Program

Date: November 14-17, 1998

Venue: Newport Beach Marriott Hotel, CA, USA

Chairman: Dr. John A. Milner (The Pennsylvania State University, USA)

Dr. Richard Rivlin (Cornell University Medical College, USA)

Theme: Recent Advances on the Nutritional Benefits Accompanying the Use of Garlic as a Supplement

Sunday, November 15, 1998

Session I: Overview

Richard Rivlin, Session Chairman (Cornell University Medical College, New York, USA)

- Historical Perspective on the Use of Garlic.
Richard Rivlin (Cornell University Medical College, New York, USA)
- Intake of Garlic and Its Bioactive Components.
Harunobu Amagase (Wakunaga of America, Co., Ltd., California, USA)
- Garlic Metabolism.
Chung Yang (Rutgers University, New Jersey, USA)

Session II: New Health Findings Associated with Garlic

Burt H. Kroes, Session Chairman (Universitate Utrecht, The Netherlands)

- Is Garlic a Drug or a Source of Nutrients: An European Perspective.
Burt H. Kroes (Universitate Utrecht, The Netherlands)
- Improved Cognition Resulting from Garlic Intake.
Nobuyoshi Nishiyama (University of Tokyo, Japan)
- Protection Against Helicobacter Pylori and Other Bacterial Infections by Garlic.
Gowsala Sivam (Bastyr University, Washington, USA)
- Suppression of Chemical Carcinogenesis by Water-soluble Organosulfur Compounds.
Shoji Fukushima (University Medical School, Osaka, Japan)

Poster Session:

- Hepatoprotective Effects of Aged Garlic Extract (AGE).
B.H. Wang, K.A. Zuzel, K. Rahman and David Billington (Liverpool John Moores University, UK)
- Antioxidant Effects of Aged Garlic Extracts.
Carmia Borek (Tufts University School of Medicine, MA, USA)
- Alleviation of the Antitumor Drug Induced Damage of Intestine by Garlic.
Toshiharu Horie (Chiba University, Chiba, Japan), S. Awazu (Tokyo University of Pharm. and Life Sci., Tokyo, Japan) and Y. Itakura, T. Fuwa (Wakunaga Pharmaceutical Co., Ltd., Hiroshima, Japan)
- Effects of Garlic Preparations on the Gastro-Intestinal Mucosa.
Teruo Hoshimo (St. Marianna University School of Medicine, Kawasaki, Japan) and N. Kashimoto (Wakunaga Pharmaceutical Co. Ltd., Hiroshima, Japan)
- Garlic Compounds Minimize Intracellular Oxidative Stress and Inhibit NF- κ B Activation.
Nagatoshi Ide and B.H.S. Lau (Loma Linda University, CA, USA)
- How to Distinguish Garlic from the Other Allium Vegetables?
Yoichi Itakura, M. Ichikawa, Y. Mori, R. Okino and T. Morita (Wakunaga Pharmaceutical Co., Ltd., Hiroshima, Japan)
- Depressed CDC25C Phosphatase and P34^{CDC2} Expression Accompany the Ability of Sulfur Compounds in Garlic to Inhibit HCT-15 Cell Proliferation.
Lynn Knowles and J.A. Milner (The Pennsylvania State University, PA, USA)
- Pharmacological Activities of Aged Garlic Extract in Comparison with the Other Garlic Preparations.
Shigeo Kasuga, N. Uda, E. Kyo, M. Ushijima, N. Morihara and Y Itakura (Wakunaga Pharmaceutical Co., Ltd., Hiroshima, Japan)
- Immunomodulatory Effects of Aged Garlic Extract.
Eikai Kyo, N. Uda, S. Kasuga and Y. Itakura (Wakunaga Pharmaceutical Co., Ltd., Hiroshima, Japan)

- The Effects of Aged Garlic Extract on Lipid Peroxidation and the Deformability of Erythrocytes.
Toru Moriguchi, N. Takasugi and Y. Itakura (Wakunaga Pharmaceutical Co., Ltd., Hiroshima, Japan)
- A Possible Beneficial Effect of Aged Garlic Extracts in the Management of Sickle Cell Anemia.
S. Tsuyoshi Ohnishi (Philadelphia Biomedical Research Institute, PA, USA)
- Products of the Maillard Reaction in Aged Garlic Extract Are Antioxidants.
John O'Brien and D.G. Gillies (University of Surrey, UK)
- Total Antioxidant Activity of Selected Garlic Preparations.
Piergiorgio Pietta and P. Simonetti (ITBA-CNR, Italy)
- N α -(1-Deoxy-D-Fructos-1-yl)-L-Arginine, An Antioxidant Compound Identified in Aged Garlic Extract.
Kenjiro Ryu, N. Ide, H. Matsuura and Y. Itakura (Wakunaga Pharmaceutical Co., Ltd., Hiroshima, Japan)
- Effect of Garlic in Cholesterol-fed Rats.
Karla Slowing, P. Ganado, M. Sanz, E. Ruiz, C. Beecher, T. Tejerina (Complutense University of Madrid, Spain)
- Heating Blocks Garlic's Protection against 7,12-Dimethylbenz(α)anthracene (DMBA) Induced Rat Mammary DNA Adducts.
Kun Song and J.A. Milner (The Pennsylvania State University, PA, USA)
- Isolation and Characterization of the Genes Up-regulated by Aged Garlic Extract.
Shi-ichiro Sumi, T. Tsuneyoshi, H. Matsuo and T. Yoshimatsu (Wakunaga Pharmaceutical Co., Ltd., Hiroshima, Japan)
- Helicobacter Pylori Infection, Garlic Intake, and Precancerous Lesions in a Chinese Population at Low Risk of Gastric Cancer.
Wei-Cheng You, Lian Zhang, Mitchell H. Gail, Yun-sheng Chang and Joseph F. Fraumeni, Jr. (National Cancer Institute, MD, USA)

Monday, November 16, 1998

Session III: Cardiovascular Benefits of Garlic

Khalid Rahman, Session Chairman (Liverpool John Moores University, United Kingdom)

- Historical Perspective on Garlic and Cardiovascular Disease.
Khalid Rahman (Liverpool John Moores University, United Kingdom)
- Reduction of Cardiovascular Risk Factors by Aged Garlic Extract (AGE).
Manfred Steiner (East Carolina University School of Medicine, USA)
- Suppressed LDL Oxidation by Garlic.
Benjamin Lau (Loma Linda University Medical School, CA, USA)
- Allyl Sulfur Compounds of Garlic Inhibit Cholesterol Biosynthesis.
Yu-Yan Yeh (The Pennsylvania State University, USA)
- Saponins in Garlic as Modifiers of Cardiovascular Diseases Risk.
Hiromichi Matsuura (University of Illinois at Chicago, USA)
- Molecular Basis by which Garlic Suppresses Atherosclerosis.
Julie Campbell (University of Queensland, Brisbane, Australia)

Session IV: Preventive and Therapeutic Benefits of Garlic Against Cancer

John Milner, Session Chairman (The Pennsylvania State University, USA)

- Historical Perspective on Garlic and Cancer.
John Milner (The Pennsylvania State University, USA)
- Garlic and Cancer: A Critical Review of the Epidemiologic Literature.
Lenore Kohlmeier (University of North Carolina, USA)
- Animal Models and Cancer Chemoprevention by Garlic.
Michael Wargovich (University of Texas, USA)
- Inhibition of Chemical Toxicity and Carcinogenesis by Diallyl Sulfide and Related Compounds from Garlic.
Chung Yang (Rutgers University, New Jersey, USA)

- Antiproliferative Effects of Garlic.
Richard Rivlin (Cornell University Medical College, New York, USA)
- Impact of Garlic Organosulfides on p21^{H-ras} Processing.
Shivendra Singh (Cancer Research Laboratory, Pennsylvania, USA)
- Enhanced Immunocompetence by Garlic.
Donald Lamm (West Virginia University, USA)
- Metabolism of Garlic and Its Constituents.
Robert Rosen (Rutgers University, New Jersey, USA)

Tuesday, November 17, 1998

Session V: Regulatory Issues

John Hathcock, Session Chairman (Council for the Responsible Nutrition, Washington, DC, USA)

- Dietary Supplements: How They Are Used and Regulated.
John Hathcock (Council for the Responsible Nutrition, Washington DC, USA)
- Strategies of the NIH Office of Dietary Supplements for Identifying Health Benefits Accompanying Supplement Use.
Bernadette Marriott (NIH Office of Dietary Supplement, Bethesda, Maryland, USA)
- Scientific Basis for Making Functional Claims for Dietary Supplements and Herbs.
Elizabeth Yetley (US Food and Drug Administration, Washington, DC, USA)
- Criteria for Standardization of Botanicals.
Vijayaraghavan Srinivasan (US Pharmacopeia, Rockville, Maryland, USA)
- Global Harmonization of Herbal Health Claims.
Gail Mahady (University of Illinois at Chicago, USA)