

# 2014 International Garlic Symposium

**Role of Garlic in Cardiovascular  
Disease Prevention, Metabolic  
Syndrome and Immunology**

*March 4th - 6th 2014  
St. Regis Monarch Beach Resort  
Dana Point, California, U.S.A.*



**Program and Abstracts**

## 2014 International Garlic Symposium Program

**Date:** March 4-6, 2014

**Venue:** St. Regis Monarch Beach Resort, CA, USA

**Chairman:** Dr. Matthew Budoff, (Harbor-UCLA Medical Center, UCLA School of Medicine, USA)  
Dr. Susan S. Percival (University of Florida, USA)

**Theme:** Role of Garlic in Cardiovascular Disease Prevention, Metabolic Syndrome and Immunology

**Wednesday, March 5, 2014**

### **SESSION 1: Overview of Garlic and Health**

Chair, Khalid Rahman (Liverpool John Moores University, UK)

- The History of Garlic's Medicinal Use  
Mark Blumenthal (American Botanical Council, USA)
- Garlic for Blood Pressure, Cholesterol and Immunity: An Overview  
Karin Ried (National Institute of Integrative Medicine, Australia)

### **SESSION 2: Isolation and Functions of Bioactive Constituents in Garlic**

Chair, Junji Terao (Tokushima University, Japan)

- Food Functions of Garlic-derived Sulfur Compounds  
Toyohiko Ariga (Nihon University, Japan)
- Discovery of Garlic's Molecules Targeting Chemosensory Recognition and Oxidative Stress  
Thomas Hofmann (Technical University of Munich, Germany)
- Biosynthesis and Profiling of Specialized Sulfur-containing Metabolites in Garlic  
Kazuki Saito (Chiba University, Japan)

### **SESSION 3: Luncheon Lecture**

Chair, Carmia Borek, PhD (Tufts University, USA)

- Garlic and Stress

Daniel J. Crisafi (pH Santé Beauté, Canada)

#### **SESSION 4: Cardiovascular Basic Studies**

Chair, Karin Ried (National Institute of Integrative Medicine, Australia)

- Cardioprotective Actions of Garlic-derived Polysulfides

David J. Lefer (Louisiana State University Health Sciences Center, USA)

- Aged Garlic Extract and Inhibition of Platelet Aggregation, The Inside Story!

Khalid Rahman (Liverpool John Moores University, UK)

- Aged Garlic Extract Inhibits Key Pathophysiological Processes in the Development of Atherosclerosis

Norbert Weiss (Technical University of Dresden, Germany)

#### **SESSION 5: Cardiovascular Clinical Studies**

Chair, Takami Oka (Wakunaga Pharmaceutical Co., Ltd., Japan)

- Aged Garlic Extract at Heart Trial: Our Past and Present Clinical Studies

Karin Ried (National Institute of Integrative Medicine, Australia)

- Preventive Effects of Garlic against Cardiovascular Disease

Matthew Budoff (Harbor-UCLA Medical Center, USA)

#### **SESSION 6: Poster Presentation**

Chair, Norbert Weiss (Technical University of Dresden, Germany)

- Structure Elucidation of Antioxidative Lignans in Aged Garlic Extract

Timo D. Stark (Technische Universität München, Germany)

- Establishment and Application of Post-Column HPLC Method in Analysis for Sulfur-containing Compounds in Garlic and Its Preparations  
Yukihiro Koderu (Wakunaga Pharmaceutical Co., Ltd., Japan)
- Metabolism and Pharmacokinetic Profile of *S*-Allyl-*L*-cysteine  
Hirotaka Amano (Wakunaga Pharmaceutical Co., Ltd., Japan)
- Garlic-derived Polysulfides Reduce the Extent of Myocardial Injury Following Acute Myocardial Infarction  
David J. Lefer (Louisiana State University Health Sciences Center, Louisiana, USA)
- Doxorubicin-induced Cardiotoxicity: Protection by Aged Garlic Extract  
Nessar Ahmed (Manchester Metropolitan University, UK)
- Aged Garlic Extract Inhibits ADP Induced Platelet Aggregation by More Than One Mechanism  
Gordon M. Lowe (Liverpool John Moores University, UK)
- Diallyl Trisulfide, A Flavor Component of Garlic, Inhibits the Platelet Aggregation through the Suppression of Akt Phosphorylation  
Takashi Hosono (Nihon University, Japan)
- Aged Garlic Extract Suppresses the Development of Atherosclerosis in Apolipoprotein E-Knockout Mice  
Naoaki Morihara (Wakunaga Pharmaceutical Co., Ltd., Japan)
- Effect of Chronic Administration of *S*-Allylcysteine (SAC) on Nrf2 and Antioxidant Enzymes Levels in Striatum, Cerebral Cortex and Hippocampus  
Úrzula Franco-Enzástiga (National Institute of Neurology and Neurosurgery, Mexico)
- Subchronic Administration of *S*-Allylcysteine (SAC), Does Not Cause Histological Damage nor Alters Renal and Hepatic Function, but Activates Nrf2 Factor in Cerebral Cortex in Male Rats  
Ricardo Santana-Martínez (National Institute of Neurology and Neurosurgery, Mexico)

- Effect of *S*-Allylcysteine, a Major Organosulfur Compound of Aged Garlic Extract, on the Resistance to Oxidative-/Heat-Stress and Longevity of *C. elegans*  
Takahiro Ogawa (Wakunaga Pharmaceutical Co., Ltd., Japan)
- Aged Garlic Extract Enhances Neurite Outgrowth in NGF-treated PC12 Cells and Reduces Cell Death Induced by 6-Hydroxydopamine in SH-SY5Y Cells through Inhibition of Reactive Oxygen Species Cytotoxicity  
Kohfuku Kohda (KOH Research Institute of Medicinal Chemistry, Japan)
- Anti-Obesity Effect of Garlic Oil  
Taiichiro Seki (Nihon University, Japan)
- Effects of Diallyl Trisulfide Derived from Garlic on Cell Growth and Apoptosis in HGC-27 Human Gastric Cancer Cells  
Tomomi Hosono-Fukao (Ochanomizu University, Japan)
- The Effects of Aged Garlic Extract on Coronary Artery Calcification Progression; Results of 4 Randomized Trials  
Mathew Budoff (Harbor-UCLA Medical Center, USA)

**Thursday, March 6, 2014**

**SESSION 7: Immune Regulation & Metabolic Syndrome (I)**

Susan S. Percival (University of Florida, USA)

- The Role of Adiponectin in Cardiometabolic Diseases  
Patricio Lopez-Jaramillo (FOSCAL, University of Santander, Colombia)
- The Effects of Aged Garlic Extract on the Regression of Coronary Plaque in Patients with Metabolic Syndrome on Coronary Computed Tomographic Angiography: Prospective Randomized Study.  
Matthew Budoff (Harbor-UCLA Medical Center, USA)

- Inhibition of Glycation by Aged Garlic Extract: Relevance to Diabetic Complications  
Nessar Ahmed (Manchester Metropolitan University, UK)
- Aged Garlic Extract Ameliorates Abnormal Fatty Acid Metabolism in Insulin Resistant Model  
Toshio Maeda (University of Shizuoka, Japan)

#### **SESSION 8: Immune Regulation & Metabolic Syndrome (II)**

Chair, Patricio Lopez-Jaramillo (FOSCAL, University of Santander, Colombia)

- Inflammation and Immunity: A Role for Garlic Products  
Susan S. Percival (University of Florida, USA)
- Bioavailability and Potential Biological Activities of Caffeodymine Analogues Found in Garlic  
Jae B. Park (United States Department of Agriculture, USA)
- Garlic Influences Gene Expression *In Vivo* and *In Vitro*  
Craig S. Charron (United States Department of Agriculture, USA)