

A world map in shades of blue and purple, with white arcs connecting various points to Hiroshima, Japan, which is marked with a small yellow star. The arcs represent global connectivity.

# **I**nternational **2019** **G**arlic **S**ymposium

## **Recent Progress in Basic and Clinical Studies of Garlic and Its Constituents in Health Promotion**

**Tuesday, May 28, 2019 - Thursday, May 30, 2019**  
**Grand Prince Hotel Hiroshima**  
**Hiroshima City, Hiroshima, Japan**

**Program and Abstracts**

## 2019 International Garlic Symposium Program

Wednesday, May 29, 2019

### **SESSION I: Overview**

Chair, Hitoshi Ashida (Kobe University, Japan)

- THE MEDICINAL HISTORY AND CULTURAL ROLE OF GARLIC  
Mark Blumenthal (American Botanical Council, USA)

### **SESSION II: Cardiovascular Studies (I)**

Chair, Matthew Budoff (Harbor-UCLA Medical Center, USA)

- CARDIOVASCULAR BENEFITS OF GARLIC  
Matthew Budoff (Harbor-UCLA Medical Center, USA)
- AGED GARLIC EXTRACT REDUCES THE CORONARY ATHEROSCLEROTIC PROGRESSION: A DOUBLE BLIND PLACEBO CONTROLLED STUDY  
Sandra Lindstedt (Lund University, Sweden)

### **SESSION III: Cardiovascular Studies (II)**

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

- KYOLIC AGED GARLIC EXTRACT IMPROVES GUT MICROBIOTA, INFLAMMATION AND CARDIOVASCULAR HEALTH IN HYPERTENSIVES: THE GARGIC TRIAL  
Karin Ried (National Institute of Integrative Medicine, Australia)
- EFFECTS OF AGED GARLIC EXTRACT ON ARTERIAL ELASTICITY IN A PLACEBO-CONTROLLED CLINICAL TRIAL USING ENDOPAT TECHNOLOGY  
Joerg Gruenwald (analyze & realize GmbH, Germany)
- PREVENTION OF CARDIOVASCULAR DISEASES BY GARLIC-DERIVED SULFUR COMPOUNDS -INHIBITION OF PLATELET FUNCTION AND COAGULATION PATHWAY BY ALLYL SULFIDE-  
Taiichiro Seki (Nihon University, Japan)

### **SESSION IV: Luncheon Lecture**

Chair, Feng-Qi Zhao (The University of Vermont, USA)

- PUBLISHING IN BIOMEDICAL SCIENCES  
Demetrios A. Spandidos (Spandidos Publications Ltd, Greece)

- SAFETY AND EFFICACY OF AGED GARLIC EXTRACT (AGE) IN DOGS: BACKGROUND TO THE DEVELOPMENT OF CANINE AGE SUPPLEMENT  
Osamu Yamato (Kagoshima University, Japan)

#### **SESSION V: Experimental and Clinical Studies (I)**

Chair, Takami Oka (Wakunaga Pharmaceutical, Japan)

- THE EFFICACY OF AGED GARLIC EXTRACT ON GINGIVITIS – A RANDOMIZED CONTROL TRIAL  
Jonathan Mann (Hebrew University-Hadassah School of Dental Medicine, Israel)
- MOLECULAR MECHANISM OF THE LIVER-PROTECTING EFFECTS OF GARLIC EXTRACTS AGAINST LIVER INJURIES  
Soichi Kojima (RIKEN Center for Integrative Medical Sciences, Japan)

#### **SESSION VI: Experimental and Clinical Studies (II)**

Chair, Junji Terao (Konan Women's University, Japan)

- AGED GARLIC EXTRACT AND ITS BIOACTIVE COMPONENTS ON SIGNALING PATHWAYS OF NEUROINFLAMMATION IN MICROGLIAL CELLS  
Zezong Gu (The University of Missouri School of Medicine, USA)
- BLACK GARLIC WOULD INHIBIT GABA-METABOLISM AND SUPPRESS CARBONYL STRESS  
Kenroh Sasaki (Tohoku Medical and Pharmaceutical University, Japan)
- HEALTH BENEFIT OF AGED GARLIC ON COGNITIVE AND LEARNING MEMORY  
Bungorn Sripanidkulchai (Khon Kaen University, Thailand)

#### **SESSION VII: Poster Presentation**

Chair, Taiichiro Seki (Nihon University, Japan)

- GARLIC CHEMISTRY IN AGING POT: DIVERSITY OF SULFUR COMPOUNDS AND THEIR PRODUCTION MECHANISMS DURING AGING PROCESS  
Yukihiro Kodera (Wakunaga Pharmaceutical, Japan)
- CHEMICAL AND BIOLOGICAL PROPERTIES OF ANTIMICROBIAL COMPOUNDS DERIVED FROM AGED GARLIC RESIDUE  
Masato Nakamoto (Wakunaga Pharmaceutical, Japan)

- DIALLYL DISULFIDE AMELIORATES RADIATION DAMAGE IN CELLS AND MICE  
Tetsuo Nakajima (National Institutes for Quantum and Radiological Science and Technology, Japan)
- ANTI-INFLAMMATION MECHANISM OF DIALLYL TRISULFIDE DERIVED FROM GARLIC  
Hirona Morishita (Nihon University, Japan)
- DIALLYL TRISULFIDE, POTENT TRPA1 AGONIST DERIVED FROM GARLIC, INCREASES FOOD INTAKE VIA VAGAL AFFERENT NERVES  
Yusaku Iwasaki (Kyoto Prefectural University, Japan)
- EVALUATION OF PLATELET AGGREGATION INHIBITORY ACTIVITY OF GARLIC FLAVOR COMPOUNDS AND THEIR ANALOGUES  
Takashi Hosono (Nihon University, Japan)
- SUPPRESSIVE FUNCTION OF GARLIC ODOR PRECURSOR ON PROLIFERATION OF MALIGNANT MELANOMA CELLS  
Tomoya Sakaguchi (Nihon University, Japan)
- *S*-ALLYL-L-CYSTEINE SULFOXIDE, A GARLIC ODOR PRECURSOR, SUPPRESSES HYPERURICEMIA INDUCED BY INJECTION OF PURINE NUCLEOTIDE  
Taisei Hagio (Nihon University, Japan)
- INDUCTION OF PHASE II DETOXIFICATION ENZYMES AND PREVENTION OF HEPATIC INJURY BY *S*-ALLYL-L-CYSTEINE SULFOXIDE, A GARLIC ODOR PRECURSOR  
Yusuke Yamaguchi (Nihon University, Japan)
- USING A SCALED LUNG MODEL TO INVESTIGATE THE DEPOSITION BEHAVIOUR OF AEROSOLS INCLUDING ALLICIN  
Alan J. Slusarenko (RWTH Aachen University, Germany)
- AGED GARLIC EXTRACT ATTENUATES INFLAMMATION AND RETARDS THE DEVELOPMENT OF ATHEROSCLEROSIS IN APOLIPOPROTEIN E-KNOCKOUT MICE  
Satomi Miki (Wakunaga Pharmaceutical, Japan)
- SHORT-TERM IMPACT OF AGED GARLIC EXTRACT ON ENDOTHELIAL FUNCTION IN DIABETES: A DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL  
Suguru Matsumoto (Harbor-UCLA Medical Center, USA)

- AGED GARLIC EXTRACT REDUCES LOW ATTENUATION PLAQUE IN CORONARY ARTERIES OF PATIENTS WITH DIABETES IN A PROSPECTIVE RANDOMIZED CONTROLLED DOUBLE BLIND STUDY  
Rine Nakanishi (Harbor-UCLA Medical Center, USA)
- AGED GARLIC EXTRACT MAY REDUCE LEFT VENTRICULAR MYOCARDIAL MASS IN PATIENTS WITH DIABETES: RESULTS FROM PROSPECTIVE RANDOMIZED CONTROLLED DOUBLE BLIND STUDY  
Matthew Budoff (Harbor-UCLA Medical Center, USA)
- AGED GARLIC EXTRACT IMPROVES THE MICROCIRCULATION: A DOUBLE-BLIND PLACEBO CONTROLLED STUDY  
Martine Wlosinska (Lund University, Sweden)
- AGED GARLIC EXTRACT INDUCES ALDEHYDE DEHYDROGENASE IN HEPG2 CELLS  
Tomoya Kitakaze (Kobe University, Japan)
- AGE AND ITS DERIVATIVE SAC INDUCE CYTOTOXICITY ON TUMOR CELLS DUE TO CAUSING MITOCHONDRIAL MEMBRANE DEPOLARIZATION  
Yuta Kanamori (Sapienza University of Rome, Italy)
- PREVENTIVE EFFECTS OF *S*-ALLYL CYSTEINE ON BISPHENOL A-INDUCED SPERM DYSFUNCTION AND OXIDATIVE STRESS IN RATS  
Ririko Kawatani (Doshisha University, Japan)
- MOLECULAR MECHANISM FOR THE NEUROPROTECTIVE EFFECT OF *S*-ALLYL-L-CYSTEINE AGAINST ENDOPLASMIC RETICULUM STRESS-INDUCED NEURONAL DEATH  
Yasuhiro Kosuge (Nihon University, Japan)
- *S*-ALLYL-COMPOUNDS CAN EFFECTIVELY SUPPRESS TISSUE FIBROSIS IN RATS  
Hikaru Miyamoto (Osaka City University Medical School, Japan)
- *S*-1-PROPENYLCYSTEINE REGULATES IMMUNE RESPONSE THROUGH AUTOPHAGY-MEDIATED PROTEIN DEGRADATION  
Jun-ichiro Suzuki (Wakunaga Pharmaceutical, Japan)
- THE INTERCELLULAR ADHESION MOLECULE-1 EXPRESSION AND IL-6 SECRETION ARE INHIBITED BY SULFUR AMINO ACIDS IN AGED GARLIC EXTRACT IN HUMAN GINGIVAL CELLS  
Masahiro Ohtani (Wakunaga Pharmaceutical, Japan)

- ANTIHYPERTENSIVE EFFECT OF *S*-1-PROPENYLCYSTEINE IN SPONTANEOUSLY HYPERTENSIVE RATS AND METABOLOMIC ANALYSIS OF ITS POTENTIAL MECHANISM

Toshiaki Matsutomo (Wakunaga Pharmaceutical, Japan)

- *S*-1-PROPENYLCYSTEINE AUGMENTS BACH1 DEGRADATION AND ANTIOXIDANT GENE EXPRESSION IN A NITRIC OXIDE-DEPENDENT MANNER IN ENDOTHELIAL CELLS

Tadamitsu Tsuneyoshi (Wakunaga Pharmaceutical, Japan)

**Wednesday, May 30, 2019**

**SESSION VIII: Isolation and Function of Bioactive Compounds**

Chair, Kazuki Saito (Chiba University, Japan)

- CHANGES IN AROMA ACTIVE COMPONENTS OF GARLIC DURING AGING PROCESS  
Takao Myoda (Tokyo University of Agriculture, Japan)
- IDENTIFICATION OF ENZYMES INVOLVED IN ALLIIN BIOSYNTHESIS IN GARLIC  
Naoko Yoshimoto (Chiba University, Japan)
- THE HUMAN ALLICIN-PROTEOME: *S*-THIOALLYLATION OF PROTEINS BY THE GARLIC DEFENCE SUBSTANCE ALLICIN AND ITS BIOLOGICAL EFFECTS  
Alan J. Slusarenko (RWTH Aachen University, Germany)

**SESSION IX: Experimental and Clinical Studies (III)**

Chair, Enzo Agostinelli (Sapienza University of Rome, Italy)

- A GARLIC ODOR PRECURSOR SUPPRESSES ELEVATION IN BLOOD ETHANOL CONCENTRATION BY ACCELERATING ETHANOL METABOLISM AND PREVENTING ETHANOL ABSORPTION FROM GUT  
Hitomi Kumagai (Nihon University, Japan)
- AGE AND SAC INDUCE CYTOTOXIC EFFECTS ON HUMAN CANCER CELLS BY ALTERING MITOCHONDRIAL PERMEABILITY TRANSITION  
Enzo Agostinelli (Sapienza University of Rome, Italy)