



*Oxygen Club  
of California*



*University  
of Turin*

**OXIDANTS AND ANTIOXIDANTS IN BIOLOGY**  
*CELL SIGNALING AND NUTRIENT – GENE INTERACTIONS*

**PROGRAM**



20-23 JUNE 2012  
ALBA, ITALY

***OXIDANTS AND ANTIOXIDANTS IN BIOLOGY***  
***CELL SIGNALING AND NUTRIENT – GENE INTERACTIONS***

20-23 June 2012

Alba, Italy

---

*A Joint Meeting of*  
*The Oxygen Club of California and the University of Turin*  
*Co-Sponsored by the Linus Pauling Institute*

---

**ORGANIZERS**

*Giuseppe Poli*

DEPARTMENT OF CLINICAL AND BIOLOGICAL SCIENCES, UNIVERSITY OF TURIN  
SAN LUIGI GONZAGA HOSPITAL, ORBASSANO, TURIN, ITALY

*Maret G. Traber*

LINUS PAULING INSTITUTE, OREGON STATE UNIVERSITY, CORVALLIS, OREGON, USA

**SCIENTIFIC ADVISORY COMMITTEE**

*Enrique Cadenas*

DEPARTMENT OF PHARMACOLOGY AND PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY,  
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

*César G. Fraga*

PHYSICAL CHEMISTRY–INSTITUTE FOR BIOCHEMISTRY AND MOLECULAR MEDICINE,  
SCHOOL OF PHARMACY AND BIOCHEMISTRY, UNIVERSITY OF BUENOS AIRES–CONICET,  
BUENOS AIRES, ARGENTINA

*Klaus Kraemer*

SIGHT AND LIFE, DSM NUTRITIONAL PRODUCTS LTD., BASEL, SWITZERLAND

*Lester Packer*

DEPARTMENT OF PHARMACOLOGY AND PHARMACEUTICAL SCIENCES, SCHOOL OF PHARMACY,  
UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

*Helmut Sies*

INSTITUTE OF BIOCHEMISTRY AND MOLECULAR BIOLOGY I, FACULTY OF MEDICINE,  
HEINRICH-HEINE-UNIVERSITY DÜSSELDORF, DÜSSELDORF, GERMANY

**WEDNESDAY**  
**JUNE 20**

11:00 – 14:30 **REGISTRATION**

14:30 – 15:00 **WELCOME**

*Ezio Pelizzetti*

PRESIDENT OF THE UNIVERSITY OF TURIN

*Maurizio Marello*

MAYOR OF ALBA

*Mario Strola*

SECRETARY GENERAL OF THE FONDAZIONE PIERA, PIETRO E GIOVANNI FERRERO

*Giuseppe Poli*

OCC VICE-PRESIDENT FOR SCIENTIFIC PLANNING

*Maret G. Traber*

OCC PRESIDENT

*Lester Packer*

OCC FOUNDING PRESIDENT

15:00 – 16:00 **KEYNOTE LECTURE**

INTRODUCED BY *Mario U. Dianzani*

SECTION OF GENERAL PATHOLOGY, DEPARTMENT OF MEDICINE AND  
EXPERIMENTAL ONCOLOGY, UNIVERSITY OF TURIN, TURIN, ITALY

**Metabolic reprogramming, caloric restriction, and aging**

*Richard Weindruch*

DEPARTMENT OF MEDICINE, SCHOOL OF MEDICINE AND PUBLIC  
HEALTH, UNIVERSITY OF WISCONSIN, MADISON, WISCONSIN, USA

**SESSION I NRF-2-DRIVEN REGULATION OF ANTIOXIDANT DEFENSE**

CHAIRPERSONS *Leopold Flohé*

DEPARTMENT OF CHEMISTRY, OTTO VON GUERICKE-UNIVERSITY MAGDEBURG,  
MAGDEBURG, GERMANY

*Matilde Maiorino*

DEPARTMENT OF BIOLOGICAL CHEMISTRY, UNIVERSITY OF PADOVA, PADOVA,  
ITALY

16:00 – 16:30 Molecular mechanisms of the Keap1-Nrf2 pathway in  
stress response and cancer evolution

*Masayuki Yamamoto*

DEPARTMENT OF MEDICAL BIOCHEMISTRY, TOHOKU UNIVERSITY GRADUATE  
SCHOOL OF MEDICINE, SENDAI, JAPAN

16:30 – 17:00 Keap1-Nrf2 signaling: targets for disease prevention

*Thomas Kensler*

DEPARTMENT OF PHARMACOLOGY AND CHEMICAL BIOLOGY, UNIVERSITY OF  
PITTSBURGH, PITTSBURGH, PENNSYLVANIA, USA

17:00 – 17:30 Nrf2-mediated redox signaling in endothelial cells:  
consequences for cardiovascular disease

*Giovanni Mann*

CARDIOVASCULAR DIVISION, BHF CENTRE OF RESEARCH EXCELLENCE,  
SCHOOL OF MEDICINE, KING'S COLLEGE LONDON, LONDON, UK

17:30 – 18:00 Adaptive survival response mediated by the Nrf2-induced  
HO1 upregulation

*Young-Joon Surh*

CANCER RESEARCH INSTITUTE, SEOUL NATIONAL UNIVERSITY, SEOUL,  
SOUTH KOREA

18:00 – 18:30 Nrf2 target genes are induced under marginal selenium deficiency

*Regina Brigelius-Flohé*

DEPARTMENT BIOCHEMISTRY OF MICRONUTRIENTS, GERMAN INSTITUTE OF HUMAN NUTRITION POTSDAM-REHBRUECKE, NUTHETAL, GERMANY

19:00 *Welcome Reception*

**THURSDAY**  
**JUNE 21**

**SESSION II NUTRIENT–GENE INTERACTIONS AND EPIGENETICS**

CHAIRPERSONS *Klaus Kraemer*

SIGHT AND LIFE, DSM NUTRITIONAL PRODUCTS LTD., BASEL, SWITZERLAND

*Maret G. Traber*

LINUS PAULING INSTITUTE, OREGON STATE UNIVERSITY, CORVALLIS,  
OREGON, USA

08:30 – 09:00 **Micronutrient genomics: an overview**

*Ben van Ommen*

TNO QUALITY OF LIFE, AJ ZEIST, THE NETHERLANDS

09:00 – 09:30 **Functional genetic polymorphisms in genes of choline metabolism**

*Steven Zeisel*

NUTRITION RESEARCH INSTITUTE, SCHOOL OF PUBLIC HEALTH AND SCHOOL OF MEDICINE, THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL, NORTH CAROLINA, USA

09:30 – 10:00 **The redox basis of epigenetic control**

*Frederick E. Domann*

FREE RADICAL AND RADIATION BIOLOGY PROGRAM, UNIVERSITY OF IOWA, IOWA CITY, IOWA, USA

10:00 – 10:30 *Coffee break*

10:30 – 11:00 **MTHFR genotype and riboflavin: a novel gene-nutrient interaction affecting blood pressure**

*Helen McNulty*

NORTHERN IRELAND CENTRE FOR FOOD AND HEALTH, UNIVERSITY OF ULSTER, COLERAINE, UK



11:00 – 11:30 Dietary histone deacetylase inhibitors for cancer prevention

*Emily Ho*

SCHOOL OF BIOLOGICAL AND POPULATION HEALTH SCIENCES AND  
LINUS PAULING INSTITUTE, OREGON STATE UNIVERSITY, CORVALLIS,  
OREGON, USA

### SESSION III NOVEL ROLES OF MICRONUTRIENTS

CHAIRPERSONS *Fulvio Ursini*

DEPARTMENT OF BIOLOGICAL CHEMISTRY, UNIVERSITY OF PADOVA,  
PADOVA, ITALY

*Fabio Virgili*

NATIONAL RESEARCH INSTITUTE FOR FOOD AND NUTRITION, ROME, ITALY

11:30 – 12:00 **Biomedical action of pomegranate ellagitannins**

*David Heber*

CENTER FOR HUMAN NUTRITION, DAVID GEFFEN SCHOOL OF MEDICINE,  
UNIVERSITY OF CALIFORNIA, LOS ANGELES, CALIFORNIA, USA

12:00 – 12:30 **Zinc and redox signaling in the developing brain**

*Patricia Oteiza*

DEPARTMENT OF NUTRITION AND DEPARTMENT OF ENVIRONMENTAL  
TOXICOLOGY, UNIVERSITY OF CALIFORNIA, DAVIS, CALIFORNIA, USA

12:30 – 14:00 *Lunch and Poster Viewing*

14:00 – 14:30 **Pharmacogenomic interactions between vitamin E and  
the haptoglobin genotype in the prevention of diabetic  
vascular disease**

*Andrew Levy*

TECHNION FACULTY OF MEDICINE, TECHNION-ISRAEL INSTITUTE OF  
TECHNOLOGY, HAIFA, ISRAEL

14:30 – 15:00 **Redox metabolism, coenzyme Q, and obesity**

*Louis Casteilla*

UMR 5241 MÉTABOLISME, PLASTICITÉ ET MITOCHONDRIE, UNIVERSITÉ DE  
TOULOUSE, TOULOUSE, FRANCE

- 15:00 – 15:30    Downstream effects of GSH depletion as inducers of longevity-associated pathways  
*Maria Rosa Ciriolo*  
DEPARTMENT OF BIOLOGY, UNIVERSITY OF ROME “TOR VERGATA”, ROME, ITALY
- 15:30 – 16:00    Redox modulation of cell signaling by lipoic acid and derivatives  
*David Carlson*  
GERONOVA, RESEARCH AND DEVELOPMENT PARK, RICHMOND, CALIFORNIA, USA
- 16:00 – 16:30    Vascular oxidative stress and inflammation in atherosclerosis and aging: ameliorating effects of  $\alpha$ -lipoic acid supplementation  
*Balz Frei*  
LINUS PAULING INSTITUTE, OREGON STATE UNIVERSITY, CORVALLIS, OREGON, USA
- 16:30 – 17:00    Redox epigenetic modifications by dietary bioactive compounds in inflammation  
*Irfan Rahman*  
DEPARTMENT OF ENVIRONMENTAL MEDICINE, LUNG BIOLOGY AND DISEASE PROGRAM, UNIVERSITY OF ROCHESTER MEDICAL CENTER, ROCHESTER, NEW YORK, USA
- 17:00              *Poster Viewing*
- 20:00              *Petit Opéra*  
Historic Hall of Teatro Sociale



**FRIDAY**  
**JUNE 22**

**SESSION IV      LIPID OXIDATION AND SIGNALING**

CHAIRPERSONS    *Michael J. Davies*

THE HEART RESEARCH INSTITUTE, NEWTOWN, SYDNEY, AUSTRALIA

*Mario Comporti*

DEPARTMENT OF PATHOPHYSIOLOGY, EXPERIMENTAL MEDICINE AND PUBLIC HEALTH, UNIVERSITY OF SIENA, SIENA, ITALY

09:00 – 09:30    **Physiological and unregulated membrane lipid oxidation**  
*Etsuo Niki*

HEALTH RESEARCH INSTITUTE, NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY, IKEDA, OSAKA, JAPAN

09:30 – 10:00    **Transcriptional interactions involving hormone nuclear receptors shaping macrophage polarity and activity**  
*Laszlo Nagy*

DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY, UNIVERSITY OF DEBRECEN, MEDICAL AND HEALTH SCIENCE CENTER, RESEARCH CENTER FOR MOLECULAR MEDICINE, DEBRECEN, HUNGARY

10:00 – 10:30    **Lipid oxidation-mediated mechanisms of destabilization of the atherosclerotic plaque**  
*Gabriella Leonarduzzi*

DEPARTMENT OF CLINICAL AND BIOLOGICAL SCIENCES, UNIVERSITY OF TURIN SAN LUIGI GONZAGA HOSPITAL, ORBASSANO, TURIN, ITALY

10:30 – 11:00    *Coffee break*

11:00 – 11:30    **Oxysterols in the pathogenesis of inflammatory-based diseases**  
*Luigi Iuliano*

VASCULAR BIOLOGY AND MASS SPECTROMETRY LABORATORY,  
DEPARTMENT OF MEDICAL SCIENCES AND BIOTECHNOLOGY,  
SAPIENZA UNIVERSITY OF ROME, LATINA, ITALY

- 11:30 – 12:00    **Electrophilic nitro-fatty acids as anti-inflammatory mediators in the vascular compartment**  
*Francisco Schopfer*  
DEPARTMENT OF PHARMACOLOGY AND CHEMICAL BIOLOGY, UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, PITTSBURGH, PENNSYLVANIA, USA
- 12:00 – 13:30    *Lunch and Poster Viewing*
- CHAIRPERSONS    *João Laranjinha*  
FACULTY OF PHARMACY AND CENTER FOR NEUROSCIENCES AND CELL BIOLOGY, UNIVERSITY OF COIMBRA, COIMBRA, PORTUGAL
- Umberto Marinari*  
DEPARTMENT OF EXPERIMENTAL MEDICINE, UNIVERSITY OF GENOVA, GENOVA, ITALY
- 13:30 – 14:00    **High cholesterol diet-induced impairment of glucose homeostasis in mice with fatty liver: role of inducible nitric oxide synthase**  
*Oren Tirosh*  
SCHOOL OF NUTRITIONAL SCIENCES, INSTITUTE OF BIOCHEMISTRY, FOOD SCIENCE AND NUTRITION, THE HEBREW UNIVERSITY OF JERUSALEM, REHOVOT, ISRAEL
- 14:00 – 14:30    **Non-alcoholic fatty liver disease, oxidative stress, and mitochondria**  
*Gaetano Serviddio*  
CENTRE FOR THE STUDY OF LIVER DISEASES, INSTITUTE OF INTERNAL MEDICINE, DEPARTMENT OF MEDICAL AND OCCUPATIONAL SCIENCES, UNIVERSITY OF FOGGIA, FOGGIA, ITALY

14:30 – 15:00 Lipid-protein adducts as biomarkers of inflammatory-  
based diseases in humans

*Corinne M. Spickett*

SCHOOL OF LIFE AND HEALTH SCIENCES, ASTON UNIVERSITY, BIRMINGHAM, UK

15:00 – 15:30 Protein oxidation: reducing the toxic effects

*Tilman Grune*

INSTITUTE OF NUTRITION, FRIEDRICH SCHILLER UNIVERSITY JENA, JENA,  
GERMANY

15:30 – 16:00 *Coffee break*



**SESSION V EPIGENETICS, METABOLISM, AND AGING**

CHAIRPERSONS *Claudio Franceschi*

DEPARTMENT OF EXPERIMENTAL PATHOLOGY, UNIVERSITY OF BOLOGNA,  
ITALY

*Alberto Boveris*

PHYSICAL CHEMISTRY–INSTITUTE FOR BIOCHEMISTRY AND MOLECULAR  
MEDICINE, SCHOOL OF PHARMACY AND BIOCHEMISTRY, UNIVERSITY OF  
BUENOS AIRES–CONICET, BUENOS AIRES, ARGENTINA

16:00 – 16:30 Epigenetic regulation of aging

*Mario Fraga*

DEPARTMENT OF IMMUNOLOGY AND ONCOLOGY, CENTRO NACIONAL DE  
BIOTECNOLOGÍA / CNB-CSIC CANTOBLANCO, MADRID, SPAIN

16:30 – 17:00 Epigenetic redox shift, nutrients, aging, and insulin

*Gregory J. Brewer*

DEPARTMENT OF MEDICAL MICROBIOLOGY, IMMUNOLOGY AND CELL  
BIOLOGY, SOUTHERN ILLINOIS UNIVERSITY SCHOOL OF MEDICINE,  
SPRINGFIELD, ILLINOIS, USA

17:00 – 17:30 Role of random changes to epigenetic marks in aging

*Silvia Gravina*

DEPARTMENT OF GENETICS, ALBERT EINSTEIN COLLEGE OF MEDICINE,  
NEW YORK, NEW YORK, USA

17:30 – 18:00 Autophagy and aging

*Ana María Cuervo*

DEPARTMENT OF DEVELOPMENTAL AND MOLECULAR BIOLOGY AND  
INSTITUTE FOR AGING STUDIES, ALBERT EINSTEIN COLLEGE OF MEDICINE,  
NEW YORK, USA

18:00 – 20:00 *Poster Viewing*

20:00 GALA DINNER

LIFETIME AWARDS

PRIZES AND AWARDS

*Oxygen Club of California and Jarrow Formulas*

*Health Sciences Prize*

Selection Committee: Lester Packer, Enrique Cadenas, Jarrow Rogovin

*Science and Humanity Award*

Sponsored by the Osato Research Institute

Selection Committee: Helmut Sies, Bruce Ames, Leopold Flohé,  
Arne Holmgren

*Aging Research Award*

Sponsored by Pharmanex Research Institute

Selection Committee: Maret G. Traber, César G. Fraga, David Heber

*Young Investigator Awards*

Sponsored by the Oxygen Club of California, Linus Pauling Institute,  
Elsevier Archives of Biochemistry and Biophysics, and The Royal  
Society of Chemistry Food and Function

Selection Committee: Josiane Cillard, Pierre Cillard, John Maguire,  
Nesrin Özer

**SATURDAY**  
**JUNE 23**

**SESSION V EPIGENETICS, METABOLISM, AND AGING**

CHAIRPERSONS *Giuseppe Valacchi*

DEPARTMENT OF EVOLUTIONARY BIOLOGY, UNIVERSITY OF FERRARA,  
FERRARA, ITALY

*Huveyda Basaga*

BIOLOGICAL SCIENCES AND BIOENGINEERING PROGRAM, FACULTY OF  
NATURAL SCIENCES AND ENGINEERING, SABANCI UNIVERSITY,  
ISTANBUL, TURKEY

08:30 – 09:00 Modulation of aging genes: importance in longevity and  
in age-associated frailty

*José Viña*

DEPARTMENT OF PHYSIOLOGY, FACULTY OF MEDICINE, UNIVERSITY OF  
VALENCIA, VALENCIA, SPAIN

09:00 – 09:30 Redox regulation of cellular stress response in aging and  
neurodegenerative disorders: role of hormesis and  
vitagens

*Vittorio Calabrese*

DEPARTMENT OF CHEMISTRY, FACULTY OF MEDICINE, UNIVERSITY OF  
CATANIA, CATANIA, ITALY

09:30 – 10:00 Relocation of mtDNA to the nucleus: implication for  
mitochondrial mutations

*Matthew O'Connor*

SENS FOUNDATION, MOUNTAIN VIEW, CALIFORNIA, USA

10:00 – 10:30 Molecular gerontology: from molecules to hormesis

*Suresh Rattan*

LABORATORY OF CELLULAR AGEING, DANISH CENTRE FOR MOLECULAR  
GERONTOLOGY, DEPARTMENT OF MOLECULAR BIOLOGY, UNIVERSITY OF  
AARHUS, AARHUS-C, DENMARK

10:30 – 11:00 *Coffee break*

11:00 – 11:30 **Proteolytic signaling dysfunction in aging**

*Kelvin J. A. Davies*

SCHOOL OF GERONTOLOGY, UNIVERSITY OF SOUTHERN CALIFORNIA,  
LOS ANGELES, CALIFORNIA, USA

11:30 – 12:00 **Reactive oxygen species in muscle wasting during aging**

*Malcolm Jackson*

PATHOPHYSIOLOGY RESEARCH UNIT, INSTITUTE OF AGEING AND CHRONIC  
DISEASE, UNIVERSITY OF LIVERPOOL, LIVERPOOL, UK

12:00 – 12:30 **Frailty: a basic and clinical challenge for the future**

*Leo Rodriguez-Mañas*

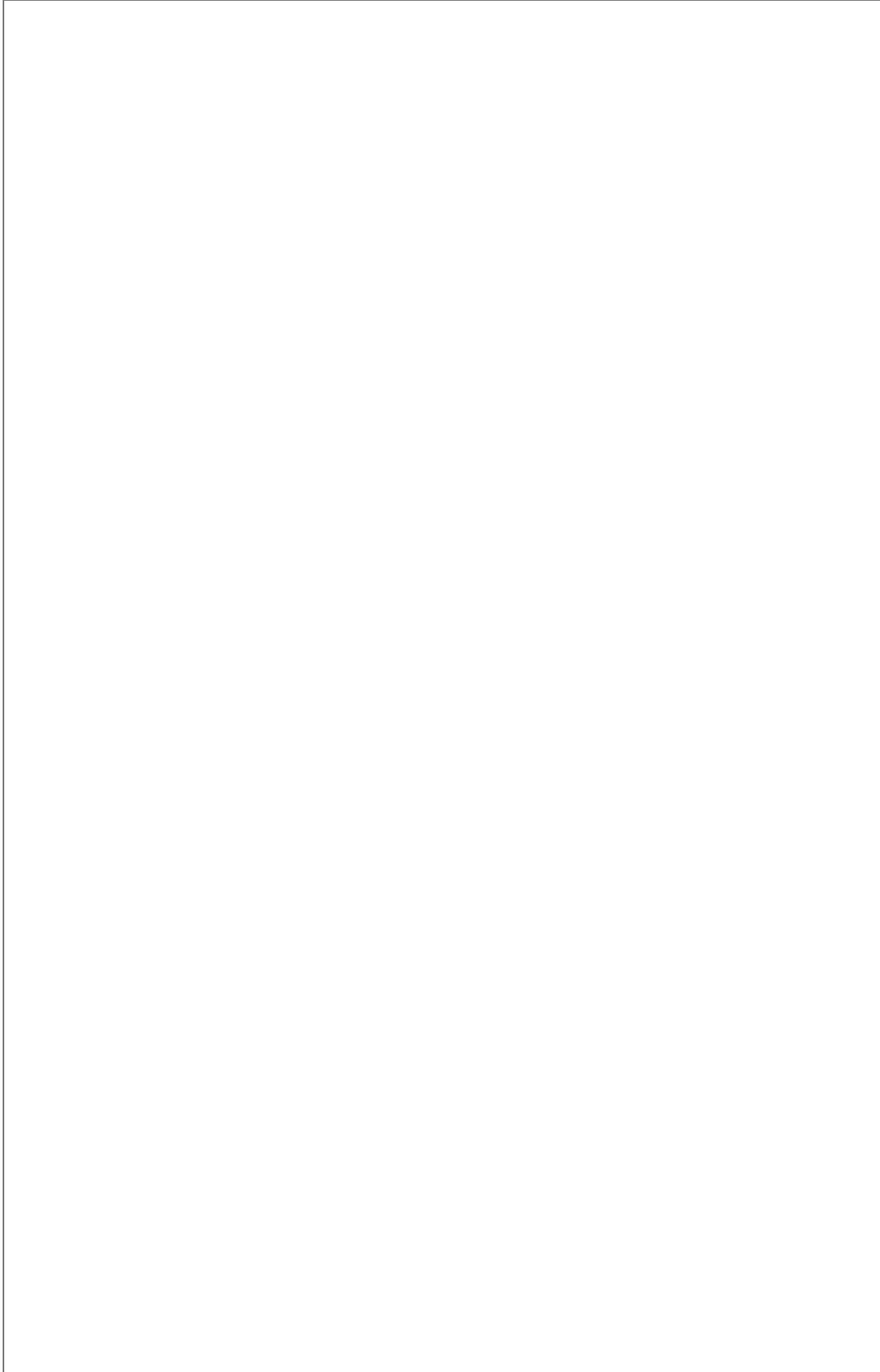
UNIDAD DE INVESTIGACIÓN, HOSPITAL UNIVERSITARIO DE GETAFE, MADRID,  
SPAIN

12:30 – 13:00 **Oxidative stress and the link of pathophysiology of  
Alzheimer's disease with vascular pathology**

*Maria Cristina Polidori*

DEPARTMENT OF GERIATRICS, MARIENHOSPITAL HERNE, RUHR UNIVERSITY  
BOCHUM, GERMANY

13:00 *Farewell Lunch*



SPONSORS

Linus Pauling Institute / Oxygen Club of California Conference Endowment Fund

NuSkin / Pharmanex Research Institute

Sight and Life, DSM Nutritional Products

Jarrow Formulas

Bayer Consumer Care AG

Glenn Foundation for Medical Research

Herbalife Nutrition Institute

Jarrow Industries

Nutrilite Health Institute

Osato research Institute

Pharmavite

POM Wonderful

RETICEF

(Red Temática de Investigación Cooperativa en Envejecimiento y Fragilidad)

Shaklee Corporation

USANA Health Sciences

Elsevier

Juice Plus

Natural Alternatives International

Ocean Spray

SENS Foundation

University of Southern California School of Pharmacy

BACK COVER