

Type 2 diabetes mellitus is a complex metabolic disease affecting over 5% of the population in Western societies and represents the final stage of long existing metabolic disturbances with deleterious effects on the vascular system, tissues and organs. The pathogenesis of type 2 diabetes involves abnormalities in both insulin action and secretion. At the molecular level, insulin resistance, the first detectable defect in type 2 diabetes, correlates with impaired insulin signaling in peripheral tissues. Both genetic and environmental factors can contribute to develop insulin resistance, been proposed as important contributors in the second group obesity and ageing. Consequently, urgent efforts are required to reduce the growing number of patients with this form of a "silent killing" metabolic disease.

The goal of this Scientific Meeting is to bring together scientists working in several intersecting areas of the field, in order to do efforts to identify the molecular events implicated in the development of the disease and to develop novel chemotherapeutic compounds to target cellular components.

This meeting is a joint working groups meeting from the European Science Foundation-COST B17 action on "Insulin Resistance, Obesity and Diabetes Mellitus in the Elderly", sponsored by the European Commission, the Complutense University and Fundación Lilly, that will facilitate an even greater interaction across the fields of expertise.



FRIDAY 28

15:00 - 17:00

SESSION I: WG 2: Insulin resistance on Glucose and other Transport Processes in Obesity, Diabetes Mellitus and Ageing. Chairpersons: M. Lorenzo and J. Eckel.

- **Identification of PKB/AKT substrates involved in GLUT4 trafficking.** Jeremy M. Tavare (United Kingdom).
- **Glucose transporters expression in human skeletal fibers.** Aase Handberg (Denmark).
- **Regulation of GLUT4 glucose transporter gene transcription in muscle.** Antonio Zorzano (Spain).
- **MEF2 activation and regulation of glucose transport in differentiated primary human skeletal muscle cultures.** Anna Krook (Sweden).

COFFE BREAK

17:30 - 19:30

- **Mechanism of cyclooxygenase-2 inhibitor-induced stimulation of glucose transport in skeletal muscle cells.** Shlomo Sasson (Israel).
- **Neuregulin signaling on glucose transport in muscle cells.** Anna Guma (Spain).
- **Insulin signaling in muscles with varying glycogen concentration.** Jorgen Jensen (Norway).
- **Insulin resistance by TNF-alpha in skeletal muscle and brown fat.** Margarita Lorenzo (Spain).

DINNER

SATURDAY 29

9:00 - 11:00

SESSION II: WG 3: Insulin signaling and resistance in muscle and fat. Chairpersons: I. Varela-Nieto and J. Jensen.

- **Role of adiponectin in the crosstalk between fat and muscle.** Jurgen Eckel (Germany).
- **High-fat diet induces a type 2 diabetic phenotype, cardiac dysfunction, myocardial oxidative stress and impaired insulin signaling in rats.** Margriet Ouwers (The Netherlands).
- **Profiling insulin action on gene expression.** Ken Sidde (United Kingdom).
- **Leptin and insulin resistance development during rat aging.** Jose Maria Carrascosa (Spain).

11:30 - 13:00

COFFE BREAK

- **Insulin resistance and chronic cardiovascular inflammatory syndrome.** Jose Manuel Fernandez-Real (Spain).
- **Adipose tissue in human insulin resistance -the role of fat cell size and adipokines.** Jan Eriksson (Sweden).
- **A lesson for the study of type 2 diabetes: insulin receptor tissue-specific knockout animals and cellular models.** Manuel Benito (Spain).

LUNCH

15:00 - 17:00

SESSION III: WG 4: Drugs and New Preventive therapeutic approaches to improve insulin resistance in Obesity, Diabetes Mellitus and Ageing. Chairpersons: A. Handberg and A. Zorzano.

- **IRS-2 as a mediator for insulin resistance in the liver.** Angela M. Valverde (Spain).
- **Metformin, AMPK and type 2 diabetes.** Louis Hue (Belgium).
- **Neuroprotection by insulin-like factors: new therapeutic perspective from development to aging.** Isabel Varela-Nieto (Spain).
- **Stimulation of glucose uptake by dehydroepiandrosterone in human adipocytes.** Francesco Giorgino (Italy).

COFFE BREAK

17:30 - 19:00

- **Effects of sodium tungstate treatment on diabetes and obesity.** Albert Barber (Spain).
- **Cellular and molecular events associated with vascular dysfunction in hyperglycemia-hyperlipidemia.** Doina Popov (Romania).
- **Human metabolic syndrome resulting from dominant-negative mutations of the PPAR.** Antonio Vidal-Puig (United Kingdom).

DINNER

PARTICIPANTS

A. Barber: Lab. Experimental Diabetes. Hospital Clinic. IDIBAPS. Barcelona, Spain. / abarbera@medicina.ub.es

M. Benito: Departamento de Bioquímica y Biología Molecular, Facultad de Farmacia, Universidad Complutense, Madrid, Spain. / benito@farm.ucm.es

J.M. Carrascosa: Departament de Biologia Molecular. Facultad de Ciencias. Centro de Biología Molecular Severo Ochoa. Universidad Autonoma, Madrid, Spain. / jmcarrascosa@cbm.uam.es

J. Eckel: German Diabetes Research Institute, Düsseldorf, Germany. / eckel@uni-duesseldorf.de

J. Eriksson: Department of Medicine, Umeå University Hospital, Umeå, Sweden. / jan.eriksson@medicin.umu.se

J.M. Fernandez-Real: Sección de Diabetes, Endocrinología y Nutrición. Hospital Universitario de Gerona "Dr. Josep Trueta". 17007 Girona, Spain. / uden.jmfernandezreal@htrueta.scs.es

F. Giorgino: Internal Medicine, Endocrinology and Metabolic Diseases, Department of Emergency and Organ Transplantation, University of Bari, Bari, Italy. / giorginf@tin.it

A. Guma: Departament de Bioquímica i Biologia Molecular, Facultad de Biología, Universitat de Barcelona, Barcelona, Spain. / aguma@ub.edu

A. Handberg: Department of Clinical Biochemistry, Aarhus University Hospital, Aarhus, Denmark. / aah@dadlnet.dk

L. Hue: HORM Unit, ICP-UCL, Brussels, Belgium. / hue@horm.ucl.ac.be

J. Jensen: Department of Anatomy, Institute of Basic Medical Sciences, University of Oslo, Oslo, Norway. / jorgen.jensen@stami.no

A. Krook: Department of Physiology and Pharmacology, Karolinska Institutet, Stockholm, Sweden. / anna.krook@ltya.ki.se

M. Lorenzo: Departamento de Bioquímica y Biología Molecular, Facultad de Farmacia, Universidad Complutense, Madrid, Spain. / mlorenzo@farm.ucm.es

M. Ouwens: Department of Molecular Cell Biology, LUMC, The Netherlands. / d.m.ouwens@lumc.nl

S. Sasson: Department of Pharmacology, School of Pharmacy, Hebrew University of Jerusalem, Israel. / sassolo@cc.huji.ac.il

K. Siddle: Department of Clinical Biochemistry, Addenbrooke's Hospital, Cambridge, United Kingdom. / ks14@mole.bio.cam.ac.uk

D. Popov: Institute of Cellular Biology and Pathology N Simionescu, Bucharest, Romania. / popov@simionescu.instcellbiopath.ro

J.M. Tavare: Department of Biochemistry, University Walk, Bristol, United Kingdom. / j.tavare@bris.ac.uk

A.M. Valverde: Instituto de Bioquímica. Centro Mixto CSIC-UCM, Madrid, Spain. / valverde@farm.ucm.es

I. Varela-Nieto: Instituto de Investigaciones Biomédicas Alberto Sols. CSIC-UAM. Madrid, Spain. / ivarela@iib.uam.es

A. Vidal-Puig: Cambridge University, United Kingdom. / ajv22@cam.ac.uk

A. Zorzano: Barcelona Science Park. Universitat de Barcelona, Barcelona, Spain. / azorzano@bio.ub.es

Venue

Hotel Puerta Castilla
(Hoteles Silken)
Paseo de la Castellana 191
28046-Madrid, Spain
T. 34 914531900
F. 34 914531905

Local organizer

Prof. Margarita Lorenzo
Dpto de Bioquímica y Biol. Mol. II
Facultad de Farmacia,
Universidad Complutense,
28040 - Madrid, Spain
Phone: 34-913941858
FAX: 34-913941779
e-mail: mlorenzo@farm.ucm.es

Organizing committee

Margarita Lorenzo, Professor, Ph.D. Madrid (Spain)
Isabel Varela-Nieto, Staff Researcher, Ph.D. Madrid (Spain)
Antonio Zorzano, Professor, Ph.D. Barcelona(Spain)

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