



12th CIBERDEM ANNUAL MEETING

November 3-4, 2021

Hotel Atenea Port, Mataró

Final Programme



Unión Europea

Fondo Europeo
de Desarrollo Regional
"Una manera de hacer Europa"

WELCOME LETTER

Dear members of CIBERDEM,

I am particularly happy to welcome you to our 2021 Annual Meeting. After 20 months of virtual meetings, it is really exciting to meet again in person. Even though we were able to quickly adapt to the new conditions imposed by the restrictions and we have made great use of the possibilities offered by the current technology to keep in contact, meet with colleagues, and attend scientific meeting across the world without leaving our office or home, most of us have also progressively felt that there was something that was missing in the virtual contact, the (sometimes intangible) additional benefits of the personal face to face interaction. Not just as a personal experience, but also on scientific terms. So, here we are again, ready to share, discuss and enjoy the good science of CIBERDEM in the oral and poster sessions, as well as the free discussions that spontaneously arise outside the meeting rooms.

I wish you a great CIBERDEM Annual Meeting,

A handwritten signature in black ink, appearing to read 'Eduard Montanya', with a long horizontal line extending to the right from the end of the signature.

Eduard Montanya

Scientific Director, CIBERDEM

11:30 REGISTRATION

12:45 OPENING AND WELCOME

Eduard Montanya
Scientific Director, CIBERDEM

13:00-14:00 SESSION 1

Chairs:

Alba Casellas

Center of Animal Biotechnology and Gene Therapy, Universitat Autònoma de Barcelona, Bellaterra

Rosa Gasa

Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona

ORAL PRESENTATIONS

13:00 OP1 The role of TSC2 acetylation and its subcellular localization in mitochondrial turnover of pancreatic β cells. Patricia Marqués^{1,3}, Burillo Jesús^{1,2,3}, Jiménez Beatriz^{1,2,3}, Carlos González^{1,3}, Gema García G^{1,2,3}, Guillén Carlos^{1,2,3}, Manuel Benito^{1,2,3}

¹ School of Pharmacy, Complutense University of Madrid; ² CIBERDEM, ISCIII, Madrid; ³ MOIR2: Mechanisms of Insulin Resistance, General Direction of Universities and Investigation (CCMM), Madrid

13:15 OP2 The role of short-chain fatty acids receptors in the functionality and plasticity of pancreatic α -cells. Alicia Sanchez-Roncero^{1,2,3}, Tamara Fernández-Marcelo², Mercedes Mirasierra^{2,4}, Paula Martínez-Oca^{1,2,3}, Deborah Burks^{2,5}, Fernando Escrivá^{1,2,3}, Mario Vallejo^{2,3,4}, Carmen Álvarez^{1,2,3}, Elisa Fernández-Millán^{1,2,3}

¹ Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Complutense University of Madrid; ² CIBERDEM, Madrid; ³ MOIR2: Mechanisms of Insulin Resistance, General Direction of Universities and Investigation (CCMM), ⁴Madrid.Instituto de Investigaciones Biomédicas Alberto Sols (CSIC/UAM), Madrid; ⁵ CIPF Principe Felipe Research Center, Valencia

13:30 OP3 Pancreatic β -cell viability tests aimed to identify diabetogenic chemicals. Reinaldo Sousa dos Santos, Laura Marroquí, Regla M. Medina-Gali, Angel Nadal

Instituto de Investigación, Desarrollo e Innovación en Biotecnología Sanitaria de Elche (IDiBE); Universidad Miguel Hernández de Elche; CIBERDEM

13:45 OP4 Generation of insulin-secreting cells from human fibroblasts by defined factors. Ainhoa García-Alamán^{*1,3}, Marta Fontcuberta-Pi Sunyer^{*1,2}, Èlia Prades¹, Noèlia Téllez^{3,4}, Hugo Figueiredo^{1,2}, Rebeca Fernandez-Ruiz^{1,3}, Sara Cervantes^{1,3}, Carlos Enrich^{1,2}, Anna Novials^{1,2}, Ramon Gomis^{1,2,3,6}, Josep Vidal^{1,2,3,5}, Rosa Gasa^{1,3}

¹ Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona; ² Faculty of Medicine and Health Sciences, Universitat de Barcelona, Barcelona; ³ CIBERDEM; ⁴ Institut d'Investigació Biomèdica de Bellvitge (IDIBELL), Barcelona; ⁵ Endocrinology and Nutrition Department, Hospital Clinic of Barcelona; ⁶ Universitat Oberta de Catalunya (UOC), Barcelona

14:00 LUNCH

15:15-16:00 SYMPOSIUM CIBERDEM-MSD 2021

Chair:

Eduard Montanya
Scientific Director, CIBERDEM

Monogenic diabetes

Luis Castaño
Hospital Universitario Cruces, Baracaldo (Vizcaya)

16:00-17:00 SESSION 2

Chairs:

Marta Díaz
Institut de Recerca Sant Joan de Déu, University of Barcelona, Esplugues, Barcelona

Maria Insenser
Hospital Universitario Ramón y Cajal, Instituto Ramón y Cajal de Investigación Sanitaria-(IRYCIS)
Madrid

ORAL PRESENTATIONS

16:00 OP5 Algorithm for the diagnosis of HFN1a MODY developed with circulating levels of miRNAs and high sensitivity C-reactive protein (hs CRP). Sara Garcia Serrano, Juan Miguel Gomez Zumaquero, Ana Lago Sampedro, Eva Garcia Escobar, Gemma Rojo Martínez, Maria Soledad Ruiz de Adana. Biomedical Research Institute of Malaga (IBIMA), Endocrinology and Nutrition Department, Regional University Hospital of Malaga, Malaga; CIBERDEM, Madrid

16:15 OP6 Kidney Risk Inflammatory Signature (KRIS) is associated with general inflammation, oxidative stress, metabolic status and renal dysfunction in pre-diabetic patients. The ePREDICE study. Sebastián Mas^{1,8}, Esther Civantos¹, Manuel Soto-Catalan¹, Nisa Boukichou^{2,3}, Luis Blanco-Colio¹, Rafael Gabriel^{4,5}, Jaakko Tuomilehto^{4,5,6,7}, Jesús Egidio^{1,8}, on behalf of the ePREDICE study

¹ Renal, Vascular and diabetes research laboratory, FIIS-Fundación Jiménez Díaz, Madrid; ² EVIDEM CONSULTORES, Madrid; ³ Asociación para la Investigación y Prevención de la Diabetes y Enfermedades Cardiovasculares (PREDICOR), Madrid; ⁴ Departamento de Salud Internacional, Escuela Nacional de Sanidad, Instituto de Salud Carlos III, Madrid; ⁵ World Community for Prevention of Diabetes Foundation (WCPD), Madrid; ⁶ National Institute for Health and Welfare, Helsinki, Finland; ⁷ University of Helsinki, Helsinki, Finland; ⁸ CIBERDEM

16:30 OP7 Effect of iron depletion on the fasting redox status of women with functional hyperandrogenism taking oral contraceptives

Andrés E. Ortiz-Flores^{1,2,3}, María Ángeles Martínez-García^{1,2}, María Insenser^{1,2}, Alejandra Quintero-Tobar^{1,2}, Sara de Lope Quiñones^{1,2}, Elena Fernández-Durán^{1,2}, Francisco Álvarez-Blasco^{1,2,4}, Lía Nattero-Chávez^{1,2,4}, Héctor F. Escobar-Morreale^{1,2,4}, Manuel Luque-Ramírez^{1,2,4}

¹ Diabetes, Obesity, and Human Reproduction Research Group, Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS) & CIBERDEM, Instituto de Salud Carlos III, Madrid; ² University of Alcalá, Alcalá de Henares, Madrid; ³ Department of Endocrinology and Nutrition, Hospital Universitario de Torrejón, Torrejón de Ardoz, Madrid; ⁴ Department of Endocrinology and Nutrition, Hospital Universitario Ramón y Cajal, Madrid

16:45 OP8 Trends in the degree of control and treatment of cardiovascular risk factors in people with type 2 diabetes attended in primary care in Catalonia during 2007-2018. Manel Mata-Cases, Josep Franch-Nadal, Jordi Real, Bogdan Vlacho, Dídac Mauricio

DAP-Cat group. Unitat de Suport a la Recerca Barcelona Ciutat, Institut Universitari d'Investigació en Atenció Primària Jordi Gol (IDIAP Jordi Gol), Barcelona, CIBERDEM, Instituto de Salud Carlos III (ISCIII)

17:00 COFFE BREAK

17:20-18:50 SESSION 3

Chairs:

Andreea Ciudin

Hospital Universitari Vall Hebron-VHIR. Grup de recerca en Diabetes y Metabolismo, Barcelona

Reinaldo Sousa dos Santos

*Instituto de Investigación, Desarrollo e Innovación en Biotecnología Sanitaria de Elche (IDiBE),
Universidad Miguel Hernández de Elche*

STATE OF THE ART LECTURE

Coupling of immunity and regeneration to treat autoimmune diseases: Wound healing revisited

Benoit Gauthier

Andalusian Center for Molecular Biology and Regenerative Medicine (CABIMER), Sevilla

ORAL PRESENTATIONS

17:50 OP9 Lower cardiorespiratory capacity in persons with type 1 diabetes is not associated with ventilatory function. Laura Brugnara, Serafín Murillo, Joan-Marc Servitja, Anna Novials

CIBERDEM, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS) Barcelona

18:05 OP10 Retinal sensitivity and gaze fixation: two independent and valuable measurements that could be obtained by using microperimetry. Andreea Ciudin, Angel Ortiz, Alba Rojano, Kimia Rahnama Zand, Elena Lainez Sanper, Nuria Ragner Sanz, Olga Simó, Cristina Hernandez, Rafael Simó

Hospital Universitari Vall Hebron-VHIR. Grup de recerca en Diabetes y Metabolismo, Barcelona

18:20 OP11 Anti-inflammatory phenotypic switch of immune cells from patients with type 1 diabetes and improved human islet engraftment/function driven by LRH-1/NR5A2 agonism. Nadia Cobo-Vuilleumier¹, Silvia Rodríguez-Fernández², Petra Isabel Lorenzo¹, Livia López-Noriega¹, Akaitz Dorronsoro¹, Christian Lachaud¹, Lidia Almenara-Fuentes², Franz Martín^{1,3}, Isabel Mérida García⁴, Manuel Aguilar Diosdado⁵, Nano Rita⁶, Lorenzo Piemonti⁶ Maribel García Sánchez⁷, Marieta Martínez Brocca⁸, Marta Vives-Pi^{2,3}, Benoit Gauthier^{1,3}

¹ Andalusian Center for Molecular Biology and Regenerative Medicine, Sevilla; ² Immunology Service, Germans Trias i Pujol Research Institute, Autonomous University of Barcelona, Badalona; ³CIBERDEM, Madrid; ⁴Fundación DiabetesCERO, Écija, Sevilla; ⁵University Hospital "Puerta del Mar", Instituto de Investigación e Innovación en Ciencias Biomédicas de la Provincia de Cádiz (INI-BICA), Cádiz; ⁶ Diabetes Research Institute, IRCCS Ospedale San Raffaele, Milan, Italy; ⁷ Biobank of the Andalusian Public Health System, Node Hospital Virgen Macarena, Sevilla; ⁸Department of Endocrinology and Nutrition. University Hospital Virgen Macarena, Sevilla

18:35 OP12 GATA4 induces liver fibrosis regression by deactivating hepatic stellate cells. Noelia Arroyo^{1,2}, Laura Villamayor^{1,2}, Irene Díaz^{1,2}, Rita Carmona^{3,4}, Mireia Ramos-Rodríguez⁵, Ramón Muñoz-Chápuli³, Lorenzo Pasquali⁵, Miguel G. Toscano⁶, Franz Martín^{1,2}, David A. Cano⁷ and Anabel Rojas^{1,2}

¹ Centro Andaluz de Biología Molecular y Medicina Regenerativa-CABIMER, Universidad Pablo de Olavide, Universidad de Sevilla, Consejo Superior de Investigaciones Científicas (CSIC), Sevilla; ² CIBERDEM, Madrid; ³ Universidad de Málaga y Centro Andaluz de Nanomedicina (BIONAND), Málaga; ⁴ Department of Human Anatomy and Embryology, Legal Medicine and History of Medicine, Faculty of Medicine, University of Málaga, Málaga; ⁵ Endocrine Regulatory Genomics, Department of Experimental & Health Sciences, University Pompeu Fabra, Barcelona; ⁶ Amarna Therapeutics SL, Sevilla; ⁷ Instituto de Biomedicina de Sevilla (IBIS), Hospital Universitario Virgen del Rocío/CSIC/Universidad de Sevilla, Sevilla

19.00-21:15 POSTERS & REFRESHMENTS

19.10 PIs MEETING

21:30 DINNER

Thursday, November 4th

9:15-11:00 SESSION 4

Chairs:

Agueda González Rodríguez

Unidad de Investigación, Hospital Universitario Santa Cristina (IIS Princesa), Madrid

María Ángeles Martín Arribas

Instituto de Ciencia y Tecnología de Alimentos y Nutrición (ICTAN-CSIC), Madrid

STATE OF THE ART LECTURE

GDF15 is a new player in the activation of AMPK

Manuel Vázquez

School of Pharmacy and Food Sciences, University of Barcelona (Barcelona)

ORAL PRESENTATIONS

9:45 OP13 Plasma succinate increases in response to hyperinsulinemia and is associated with insulin sensitivity during clamp. Brenno Astiarraga¹, Laia Martínez¹, Maria Arnoriaga-Rodríguez², José Manuel Fernández-Real², Joan Vendrell¹, Sonia Fernández-Veledo¹

¹ CIBERDEM, Instituto de Salud Carlos III, Barcelona, Hospital Universitari de Tarragona Joan XXIII, Institut d'Investigació Sanitària Pere Virgili, Universitat Rovira i Virgili, Tarragona; ² Department of Diabetes, Endocrinology and Nutrition, Dr. Josep Trueta University Hospital, Girona, Spain; Nutrition, Eumetabolism and Health Group, Girona Biomedical Research Institute (IdibGi), Girona, Spain; Biomedical Research Networking Center for Physiopathology of Obesity and Nutrition (CIBEROBN), Madrid, Spain; Department of Medical Sciences, Faculty of Medicine, Girona University, Girona

10:00 OP14 Endoplasmic reticulum stress downregulates PGC-1 α in skeletal muscle through ATF4 and mTOR-mediated reduction of CRT2. Marta Montori Grau, David Aguilar Recarte, Mohammad Zarei, Javier Pizarro Delgado, Xavier Palomer, Manuel Vázquez Carrera.

Department of Pharmacology, Toxicology and Therapeutic Chemistry, Faculty of Pharmacy and Food Sciences, University of Barcelona, CIBERDEM

10:15 OP15 Preservation of muscle mitochondrial fitness determines metabolic homeostasis and healthy aging. Andrea Irazoki^{1,2,3}, Marta Martínez-Vicente⁴, Pilar Aparicio⁵, Cecilia Aris⁶, Esmail Alibakhshi⁷, Maria Rubio-Valera⁸, Juan Castellanos⁵, Luis Lores⁷, Manuel Palacín^{1,2,9}, Anna Gumà^{2,3,10}, Antonio Zorzano^{1,2,3}, David Sebastián^{1,3,11}

¹ Institute for Research in Biomedicine (IRB Barcelona), The Barcelona Institute of Science and Technology, Barcelona; ² Departament de Bioquímica i Biomedicina Molecular, Facultat de Biologia, Universitat de Barcelona; ³ CIBERDEM, Instituto de Salud Carlos III; ⁴ Neurodegenerative Diseases Research Group, Vall d'Hebron Research Institute-Center for Networked Biomedical Research on Neurodegenerative Diseases (CIBERNED), Barcelona; ⁵ Department of Orthopedic Surgery and Traumatology, Hospital General Parc Sanitari Sant Joan de Déu, Sant Boi de Llobregat, Barcelona; ⁶ Department of Family and Community Medicine, Hospital General Parc Sanitari Sant Joan de Déu, Sant Boi de Llobregat, Barcelona; ⁷ Pneumology Department, Hospital General Parc Sanitari Sant Joan de Déu, Sant Boi de Llobregat, Barcelona; ⁸ Hospital General Parc Sanitari Sant Joan de Déu, Sant Boi de Llobregat, Barcelona, CIBERESP, Madrid; ⁹ CIBERER, Instituto de Salud Carlos III; ¹⁰ Institute of Biomedicine of the University of Barcelona (IBUB); ¹¹ Department of Biochemistry and Physiology, School of Pharmacy, University of Barcelona

10:30 OP16 Effect of inhibition of the protein tyrosine phosphatase 1B in lipotoxicity in liver progenitor oval cells. Inés Barahona^{1,2}, M. Pilar Valdecantos^{1,2}, Patricia Rada^{1,2}, Alba Astudillo^{2,3}, Jesús Balsinde^{2,3}, Aránzazu Sánchez⁴, Ángela M. Valverde^{1,2}

¹ IIBm Alberto Sols (CSIC-UAM), Madrid; ² CIBERdem (ISCIII); ³ Instituto de Biología y Genética Molecular (CSIC-UVA), Valladolid; ⁴ Departamento de Bioquímica y Biología Molecular, UCM, Madrid

10:45 OP17 Reduction of inflammatory responses in macrophages by phosphatidylcholine-containing palmitoleic acid isomers and its remodeling to bioactive lipids. Miguel Ángel Bermúdez, Alma M. Astudillo, Clara Meana, María A. Balboa and Jesús Balsinde
Instituto de Biología y Genética Molecular (IBGM), Consejo Superior de Investigaciones Científicas (CSIC), Valladolid

11:00 COFFE BREAK

11:30-12:45 SESSION 5

Chairs:

Jesus Balsinde

Instituto de Biología y Genética Molecular, University of Valladolid-CSIC, Valladolid

Josep Julve

Institut de Recerca de l'Hospital Santa Creu i Sant Pau, Institut d'Investigacions Biomèdiques IIB Sant Pau, Barcelona.

ORAL PRESENTATIONS

11:30 OP18 TRPC3 as an intermediate player in LPIN-1 dependent TLR4 signaling pathway and a potential target for type 2 diabetes therapy. Clara Meana, Javier Casas, Jesús Balsinde and María A. Balboa.

Instituto de Biología y Genética Molecular, Consejo Superior de Investigaciones Científicas (CSIC), Valladolid

11:45 OP19 *Alx3*-deficiency associates with dysfunctional lipid metabolism and paradoxically reduced diet-induced adiposity in mice. Mercedes Mirasierra^{1,3}, Antonio Fernández-Pérez^{1,3}, Noelia Keiran^{2,3}, Miriam Ejarque^{2,3}, Joan Vendrell^{2,3}, Sonia Fernández-Veledo^{2,3}, Mario Vallejo^{1,3}

¹Instituto de Investigaciones Biomédicas Alberto Sols (CSIC/UAM), Madrid; ²Hospital Universitari de Tarragona Joan XXIII, Institut d'Investigació Sanitària Pere Virgili, Tarragona; ³CIBERDEM

12:00 OP20 A central-peripheral inter-organ crosstalk mediates alterations in hepatic metabolism and thermogenesis by olanzapine intraperitoneal treatment in male mice. Vítor Ferreira^{1,2}, Patrícia Rada^{1,2}, María García-Altares^{2,3}, María Guillén¹, Irma García-Martínez^{1,2}, Rosa Alen^{1,2}, Diana Grajales^{1,2}, Assel Sarsenbayeva⁴, Pilar López Larrubia¹, Sebastian Cerdan¹, Jan Eriksson⁴, Maria Pereira⁴, Xavier Correig-Blanchar^{2,3,5}, Ángela M. Valverde^{1,2}

¹IIBm Alberto Sols (CSIC-UAM), Madrid; ²CIBERDEM, ISCIII; ³Department of Electronic Engineering, Rovira i Virgili University, Tarragona; ⁴Department of Medical Sciences, Clinical Diabetes and Metabolism, Uppsala University, Uppsala, Sweden; ⁵Institut d'Investigació Sanitària Pere Virgili, Tarragona

12:15 OP21 Heparin binding triggers human VLDL remodeling by lipoprotein lipase: Relevance to VLDL functionality in diabetes and hypertriglyceridemia. Shobini Jayaraman¹, Antonio Pérez^{2,3}, Inka Miñambres² Jose Luis Sánchez-Quesada^{3,4} Olga Gursky¹

¹Department of Physiology & Biophysics, Boston University School of Medicine, Boston, MA, USA; ²Endocrinology Department of the Hospital de la Santa Creu i Sant Pau, Barcelona; ³CIBERDEM; ⁴Cardiovascular Biochemistry Group, Research Institute of the Hospital de Sant Pau, Barcelona

12:30 OP22 HERMES: a molecular formula-oriented method to target the metabolome. Roger Giné¹, Jordi Capellades^{1,2}, Josep M. Badia^{1,2}, Dennis Vughs³, Michaela Schwaiger-Haber^{4,5}, Theodore Alexandrov^{6,7,8}, Maria Vinaixa^{1,2}, Andrea M. Brunner³, Gary J. Patti^{4,5}, Oscar Yanes^{1,2}

¹Universitat Rovira i Virgili, Department of Electronic Engineering & IISPV, Tarragona; ²CIBERDEM, Instituto de Salud Carlos III, Madrid; ³KWR Water Research Institute, Nieuwegein, The Netherlands; ⁴Department of Chemistry, Washington University, St. Louis, MO, USA; ⁵Department of Medicine, Washington University, St. Louis, MO, USA; ⁶Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany; ⁷Molecular Medicine Partnership Unit, European Molecular Biology Laboratory, Heidelberg, Germany; ⁸Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California San Diego, La Jolla, California, USA

13:00 CIBERDEM INTRAMURAL PROJECTS 2019

Chairs:

Angel Nadal

*Instituto de Investigación, Desarrollo e Innovación en Biotecnología Sanitaria de Elche (IDiBE);
Universidad Miguel Hernandez de Elche*

Anna Novials

Instituto de Investigaciones Biomédicas August Pi i Sunyer (IDIBAPS), Barcelona

13:00 Role of the succinate/SUCNR1 axis in the physiopathology of NAFLD

Victoria Ceperuelo¹, Patricia Rada²

¹ Institut d'Investigació Sanitària Pere Virgili, Tarragona; ² Instituto de Investigaciones Biomédicas Alberto Sols (CSIC-UAM), Madrid

13:20 Searching biomarkers of response to intravitreal injections of anti-VEGF and corticosteroid in the treatment of Diabetic Macular Edema

Irma García Martínez¹, Marta Garcia Ramírez², Nuria Pescador³

¹ Instituto de Investigaciones Biomédicas Alberto Sols (CSIC-UAM), Madrid; ² Hospital Vall d'Hebron, Vall d'Hebron Research Institute (VHIR), Barcelona; ³ Hospital Clínico Universitario San Carlos, Madrid

13:40 Adipose tissue expression of extracellular matrix factors as a preoperative predictor of weight loss response to bariatric surgery

Óscar Osorio¹, Miriam Ejarque²

¹ Instituto de Investigaciones Biomédicas August Pi i Sunyer (IDIBAPS), Barcelona; ² Institut d'Investigació Sanitària Pere Virgili, Tarragona

14:00 CLOSING AND FAREWELL

14:15 LUNCH