

CNIO - CaixaResearch Foundation Frontiers Meeting
Metabolism and Cancer: Insights from Obesity and Beyond - 20th- 22nd, 2026

Venue:

Spanish National Cancer Research Centre – CNIO Auditorium, Madrid, Spain

Organizing committee:

Roger Davis, Molecular Medicine, UMass Chan Medical School, Massachusetts, US

Nabil Djouder, Growth Factors, Nutrients and Cancer, CNIO, Madrid, Spain

Alejo Efeyan, Metabolism and Cell Signalling Group, CNIO, Madrid, Spain

M^a Carmen Fernández Agüera, Cell Metabolism, Cell Press, Seville, Spain

Miguel A. Quintela, Breast Cancer Clinical Research, CNIO, Madrid, Spain

Guadalupe Sabio, Organ Crosstalk in Metabolic Diseases, CNIO, Madrid, Spain

Rationale:

Obesity remains a significant health concern, affecting over 17% of adults in Europe and contributing significantly to cancer development. The primary goal of the conference is to deepen our understanding of metabolic crosstalks and their profound implications for cancer. Taking a holistic approach, the event will explore the plethora of interactions between metabolism and cancer across various tissues and organs.

The conference will highlight key drivers stemming from unhealthy metabolism that impact cancer development. It will delve into cutting-edge topics such as advancements in adipocyte biology, uncovering the diverse roles of adipose tissue beyond fat storage and its influence on tumor metabolism. Additionally, groundbreaking research on exercise and its potential impact on cancer will be presented. The role of mitochondrial bioenergetics in metabolic regulation will be rigorously examined, offering promising avenues for cancer therapy. Moreover, the conference will scrutinize the tumor microenvironment and metabolic changes in surrounding tissues, alongside immune modulation, particularly in the context of obesity. Cachexia, a complex syndrome involving muscle wasting and its relationship with cancer, will also be a focal point.

SPEAKER LIST

Kivanç Birsoy, Metabolic Regulation and Genetics, Rockefeller University, New York, US

Arkaitz Carracedo, CIC bioGUNE, Center for Cooperative Research in Biosciences, Vizcaya, Spain

Paul Cohen, The Rockefeller University, New York, US

Gina DeNicola, Moffitt Cancer Center, Tampa, US

Sabrina Diano, Institute of Human Nutrition, Columbia University, New York, US

Ilaria Elia, KU Leuven, Leuven, Belgium

Sarah-Maria Fendt, VIB KU Leuven Center for Cancer Biology, Leuven, Belgium

Marcus D. Gonçalves, NYU Langone Health, New York, US

Mathias Heikenwälder, German Cancer Research Center (DKFZ), Tübingen, Germany

Stephen Herzig, Helmholtz Munich, Munich, Germany

Tobias Janowitz, Cold Spring Harbor, New York, US

Lydia Lynch, Ludwig Institute for Cancer Research, Princeton University, Princeton, US

Brendan Manning, Harvard T.H. Chan School of Public Health, Boston, US

Rubén Nogueiras, Center for Research in Molecular Medicine and Chronic Diseases. Santiago de Compostela, Spain

Celeste Simon, University of Pennsylvania Perelman School of Medicine, Philadelphia, US

Aleksandra Trifunovic, University of Cologne, Cologne, Germany

Karen Vousden, The Francis Crick Institute, London, UK

Eileen White, Rutgers Cancer Institute, Ludwig Institute for Cancer Research, New York, US

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Wednesday May 20th, 2026

08:30-09:15 *Registration - main hall*

09:15-09:30 *Welcome address Guadalupe Sabio*

09:30-11:45 **Session 1. Obesity, Adipose Tissue, and Systemic Metabolism in Cancer**
Chair: Guadalupe Sabio

09:30 – 10:00 New Roles for Adipose Tissue in Health and Disease
Paul Cohen, The Rockefeller University, New York, US

10:00 – 10:30 Cancer Cachexia: From Tumor to Liver
Stephan Herzig, Helmholtz Munich, Munich, Germany

10:30-11:00 *Poster session group 1 - coffee break – Canteen*

11:00 – 11:15 *short talk: Investigating cancer-associated adipose tissue wasting in obese and non-obese Drosophila models*
Miriam Rodríguez Vázquez, MRC Laboratory of Medical Sciences (LMS), London, UK

11:15 – 11:45 What we eat and when influences tumor growth and immune surveillance
Lydia Lynch, Ludwig Institute for Cancer Research, Princeton University, Princeton, US

11:45-14:30 **Session 2. Exercise, Nutritional Signals, and Cancer Prevention**
Chair: Miguel A. Quintela

11:45 – 12:00 *short talk: A Randomised Phase II Trial of Precision Nutrition in Patients Receiving Antibody–Drug Conjugates: Effects on Quality of Life, Toxicity and Metabolic Phenotypes (LUMInova)*
Nuria Moreno Marín, Spanish National Cancer Research Centre (CNIO), Madrid, Spain

12:00-13:45 *Lunch break – Canteen*

13:45 – 14:15 Cysteine metabolism in cancer
Gina DeNicola, Moffitt Cancer Center, Tampa, US

14:15 – 14:30 *short talk Do sweetened beverages increase pancreatic cancer risk? Interrogating nucleolar sensing of fructose-derived acetate*
Roberta Noe, University of Padova/VIMM, Padova, Italy

14:30 – 17:00 **Session 3. Cachexia and Muscle-Wasting Syndromes in Cancer**
Chair: Nabil Djouder

14:30 – 14:45 *short talk: Adenosine dependency as a therapeutic vulnerability in TP53 deficient cancers*
Ana Janic, University Pompeu Fabra, Barcelona, Spain

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14:45 – 15:15 Metabolic Alterations Driving Cancer Cachexia

Eileen White, Rutgers Cancer Institute, Ludwig Institute for Cancer Research,
New York, US

15:15 – 15:45 Mechanisms of behavioral changes during cancer progression

Tobias Janowitz, Cold Spring Harbor, New York, US

15:45-16:15 Poster session group 1 - coffee break – Canteen

16:15 – 16:30 *short talk: Hepatic p38delta orchestrates circadian rhythms
through Bmal1 phosphorylation*

Juan Ignacio Jiménez-Loygorri, Spanish National Cancer Research Centre (CNIO),
Madrid, Spain

16:30 – 17:00 Tumor Inflammation and Appetite Loss During Cachexia

Marcus D. Goncalves, NYU Langone Health, New York, US

Thursday May 21st, 2026

09:30-12:15 Session 4. Metabolic Reprogramming and Tumor-Intrinsic Pathways

Chair: Ruben Nogueiras

09:30 – 10:00 From Metabolite to Messenger: Lactate in Feeding Regulation

Sabrina Diano, Institute of Human Nutrition, Columbia University, New York, US

10:00 – 10:15 *short talk: Loss of UFMylation supports prostate cancer metastasis and rewires
cell metabolism towards hexosamine biosynthesis*

Laura Bozal Basterra, CIC bioGUNE, Vizcaya, Spain

10:15 – 10:45 Metabolic Control of Cancer Progression

Karen Vousden, The Francis Crick Institute, London, UK

10:45-11:30 Group picture CNIO main entrance / poster session group 2 & coffee break – Canteen

11:30 – 12:00 From Mitochondrial Dysfunction to Tissue Remodelling

Aleksandra Trifunovic, University of Cologne, Cologne, Germany

12:00 – 12:15 *short talk: Urea cycle upregulation is a metabolic adaptation
driving liver-specific metastatic organotropism*

Víctor Manuel Cruz Vilchez, Severo Ochoa Centre for Molecular Biology, Madrid, Spain

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12:15-17:15 Session 5. Tumor Microenvironment and Metabolic Interactions

Chair: M^a Carmen Fernández Aguera

12:15 – 12:45 Understanding the role of lipid metabolism in tumor immune evasion
Kivanç Birsoy, Metabolic Regulation and Genetics, Rockefeller University, New York, US

12:45 – 13:00 *short talk: A time-resolved map of fumarate hydratase loss*
Nerea Deleyto Seldas, University of Cologne, CECAD (Cologne Excellence Cluster on Aging and Aging-Associated Diseases), Cologne, Germany

13:00-14:00 Lunch break – Canteen

14:00 – 14:30 Metabolic rewiring Driving Metastasis Formation
Sarah-Maria Fendt, VIB KU Leuven Center for Cancer Biology, Leuven, Belgium

14:30 – 14:45 *short talk: Bile acids preserve biliary identity to avert liver fibrosis progression*
Paula Sánchez Sánchez, Spanish National Cancer Research Centre, Madrid, Spain

14:45 – 15:15 Role of mTOR signaling in the metabolism of growing tumors
Brendan Manning, Harvard T.H. Chan School of Public Health, Boston, US

15:15 – 15:30 *short talk: Hepatocyte desmosterol modulation influences the development of colorectal liver metastasis*
Ane Nieva Zuluaga, University of the Basque Country (UPV/EHU), Vizcaya, Spain

15:30-16:00 Poster session group 2 - coffee break – Canteen

16:00 – 16:30 From Cell Cycle Regulators to Liver Metabolism
Rubén Nogueiras, Center for Research in Molecular Medicine and Chronic Diseases. Santiago de Compostela, Spain

16:30 – 16:45 *short talk: Hepatic mTORC1 as a mediator of the protective effects of dietary restriction on liver cancer*
Elena Fernández Florido, Spanish National Cancer Research Centre, Madrid, Spain

16:45 – 17:15 The influence of cellular and systemic metabolism in prostate cancer progression
Arkaitz Carracedo, CIC bioGUNE, Center for Cooperative Research in Biosciences, Vizcaya, Spain

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Friday, May 22nd, 2026

09:30-12:30 **Session 6. Metabolic Pathways in Cancer**

Chair: Alejo Efeyan

09:30 – 10:00 Deciphering the hepatic immune-metabolic environment opening novel combinatorial therapies to treat liver cancer
Mathias Heikenwälder, German Cancer Research Center (DKFZ), Tübingen, Germany

10:00 – 10:15 *short talk: Nutrient-Driven Control of Mitochondrial OXPHOS: Boosting Hepatic Fatty Acid β (beta)-Oxidation (FAO) to Support Healthy Aging*
Laura Formentini, Autonomous University of Madrid, Madrid, Spain

10:15 – 10:30 *short talk: When Estrogen Declines: Liver Fat Accumulation Protects Against Drug-Induced Liver Injury via NRF2 Activation*
Sara Cogliati, Centre for Molecular Biology Severo Ochoa, Madrid, Spain

10:30 – 10:45 *short talk: Hypothalamic AMPK is a central node in the neural circuitry of cancer cachexia*
Vítor Ferreira, CIMUS, USC, Santiago de Compostela, Spain

10:45-11:15 *coffee break – Canteen*

11:15 – 11:45 Understanding the metabolic cross-talk between cancer and T cells in metastatic Melanoma
Ilaria Elia, KU Leuven, Leuven, Belgium

11:45 – 12:15 Leveraging Metabolism to Cure Primary and Metastatic Kidney Cancer
Celeste Simon, University of Pennsylvania Perelman School of Medicine, Philadelphia, US

12:15 *Poster/talk prizes*

Wrap up and closing

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[Poster session 1 Wednesday 20](#)

- 1/ Acetylation-dependent control of SIAH2 links JAK2V617F to mitochondrial respiration and ROS-associated Apoptosis **ALHASSAN MOHAMED MUSTAFA ABDEEN**
- 2/ E2F1-driven metabolic dysregulation is involved in Hippo pathway-driven CCA progression **KENDALL ALFARO JIMÉNEZ**
- 3/ Adipose-immune dysregulation promotes breast cancer progression **ANA BELÉN ALONSO AGUADO**
- 4/ The role of solute carrier transporters in thermogenic activation of human adipocytes: thiamine transport from extracellular space to mitochondria **RINI ARIANTI**
- 5/ Adipocyte MKK3 increases in human obesity protecting against insulin resistance by p38beta activation **EDGAR BERNARDO**
- 6/ Deciphering the role of adipose tissue in obesity pathogenesis **CLARA BONACASA ESCRICH**
- 7/ NPC2-mediated cholesterol trafficking as a critical regulator of signaling plasticity and therapeutic response in colorectal cancer **ISSAM BOUKICH EL JOUHARI**
- 8/ Impact of fructose consumption on the progression of colorectal cancer in a genetically modified mouse model **TANIA CHICA CID**
- 9/ p38 in Kupffer cells controlling MASLD and HCC **ALBA CONCEPCIÓN ARCONES**
- 10/ Role of FAXDC2 in the crosstalk between cholesterol biosynthesis and Wnt signaling in metastatic colorectal cancer **MARÍA CUERDA LÓPEZ**
- 11/ Defining the role of a high-fat diet in the regulation of disseminated tumor cell homing and dormancy **MARÍA VICTORIA DEL CASTILLO SARDUY**
- 12/ Exploring the role of Kupffer Cells in HCC development **NAUZET CELSO DENIZ EYRE**
- 13/ Exploring the dynamics of lipid-associated macrophage infiltration into adipose tissue upon weight cycling **SARAH ENZENHOFER**
- 14/ TFEB activation shifts oncogenic nutrient – RagC signalling to a rampant autoimmune B cell fate **LUCAS FELLMANN IZURIETA Y SEA**
- 15/ High-fat diet imprints a macrophage-tumor CAMPP2RX7 axis driving pancreatic cancer initiation, plasticity and metastasis **ANA GALVÁN DEL REY**
- 16/ Neurochondrin drives colorectal cancer progression by modulating the PODXL–Ezrin axis and mitochondrial function **MARTA GÓMEZ DE CEDRÓN**
- 17/ Rank-driven metabolic reprogramming in postmenopausal breast cancer **MARIA ARANZAZU GÓMEZ DÍAZ**
- 18/ Decoding the Adipose–Liver Axis: Multi-Omic Insights and Biomarker Discovery in MASLD Progression **VÍCTOR MANUEL GUERRERO-SÁNCHEZ**
- 19/ Metabolic adaptation to reactive aldehydes enables efficient melanoma metastasis to lung and liver **GONZALO HERRANZ**
- 20/ A fasting-mimicking cell culture medium for metabolism and cancer research **KRSTIC JELENA**

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[Poster session 2 Thursday 21](#)

- 21/ Patient-derived liver organoids in metabolic assays **LILIAN LAMPRECHT**
- 22/ A PDHA1–PDK1–SCAF1 axis regulates mitochondrial respiratory chain organization during metabolic rewiring in cancer cells **SANDRA LOPEZ-CALCERRADA**
- 23/ A ketogenic diet delays metastatic growth in a natural killer cell-dependent manner **CARLOS MARTÍNEZ GARAY**
- 24/ Deletion of hepatic p38 δ rewires liver metabolism and protects against NAFLD development **DANIEL MATAMALA LUENGO**
- 25/ Reprogramming of muscle p38 signalling as a pathway to better ageing **ALFONSO MORA**
- 26/ Genetic Drivers of Immunometabolism Influence Risk and Survival in Early-Onset Colorectal Cancer **ANDREA OCHAITA AGUADO**
- 27/ Loss of MCJ links mitochondrial ROS to macrophage-driven inflammation during obesity **JAVIER PÉREZ-GARCÍA**
- 28/ Brown adipose tissue activation as a protective factor against lipotoxicity-induced hepatocarcinogenesis **MARION PEYROU**
- 29/ Defining the role of RANK signalling in macrophage metabolic rewiring in breast cancer **MACARENA POZO MORALES**
- 30/ Single-Cell Transcriptomic Signatures of Early Hepatic Stress and Metabolic Rescue: Implications for Liver Cancer Predisposition **JESÚS RAFAEL RODRÍGUEZ AGUILERA**
- 31/ Adipocyte–CSC Crosstalk Fuels Lipid Driven Aggressiveness in Pancreatic Cancer **ALBA ROYO GARCÍA**
- 32/ Obesity-Mediated Molecular Alterations in Adipocyte Extracellular Vesicles Drive Gastric Cancer Progression **ADI RUBIN**
- 33/ Role of p38 signalling in CD8+ T cell function during hepatocellular carcinoma development **IRENE RUIZ GARRIDO**
- 34/ Distinct mutational landscapes drive specific metabolic rewiring in HCC, shaping differential responses to feeding a high-fat diet **NATALIA SAINZ-RAMIREZ**
- 35/ Metabolic landscape of diffuse large b-cell lymphoma subtypes: the role of kmt2d in metabolic rewiring of EZB lymphomas **SARA SALAZAR-ORTEGO**
- 36/ A novel adipokine linking adipose stress to systemic metabolic dysfunction in obesity **ANGELA SÁNCHEZ-FERNÁNDEZ**
- 37/ Dietary Fat and Adiposity Limit the Therapeutic Efficacy of PPAR- δ Inhibition in Pancreatic Ductal Adenocarcinoma **PATRICIA SANCHO**
- 38/ P4HA1 drives dysmetabolic pancreatic ductal adenocarcinoma and represents a potential target to improve therapy response **FRANCESCO SPALLOTTA**
- 39/ Tumor–pre-adipocyte crosstalk sustains breast cancer growth via ret signalling **SABRINA A. VALLONE**
- 40/ GLP-1R decline during breast cancer progression is driven by site-specific CpG hypermethylation **VIRGINIA VIGIANO BENEDETTI**
- 41/ Obesity elicits prostate cancer castration resistance through altered tumor-stroma interactions **AMAIA ZABALA LETONA**