

# *Metabolic Basis of Cardiovascular Risk Group - CIBERDEM*

Group members (only included Ph.D):

- Francisco Blanco-Vaca, M.D., Ph.D., Chief of Biochemistry Department of the Hospital de la Santa Creu i Sant Pau Hospital and Group Leader at the the National Center of Diabetes and Metabolic Associated Diseases (CIBERDEM).
  - Antonio Pérez Pérez, M.D., Ph.D., Endocrinologist, Chief of Unit in Endocrinology and Nutrition Department of Hospital de la Santa Creu i Sant Pau Hospital.
  - Joan Carles Escolà-Gil, Ph.D., is a Biochemist specialist in Lipoprotein Metabolism, mainly HDL metabolism. He was hired in 2008 by the I3 program (MINECO).
- Josep Julve-Gil, Ph.D., is a Biochemist specialist in Lipoprotein Metabolism in cardiometabolic diseases. He was hired in 2014 by the Miguel Servet (ISCIII).
- Jesús M. Martín-Campos, Ph.D., is a Geneticist specialist in the study of the Genetics of Dyslipidemia.
  - Lúdia Cedó, Ph.D., is a specialist in Nutritional agents for correcting metabolic disorders.

# *Research Lines*

- Hypertriglyceridemia and low HDL (Atherogenic dyslipidemia): modulation by diet and drugs and role in diabetes mellitus and atherothrombotic cardiovascular disease development.
- Genetics of dyslipidaemia, type 2 diabetes and hyperhomocysteinaemia.
- New webpage for increasing the cascade screening for Familial Hypercholesterolemia in Catalonia (<http://www.cholesterolgenetic.cat/>)
- Development of experimental-biochemistry and molecular biology techniques and their application to clinical laboratory practice (innovation).
- Cholesterol metabolism in human breast and epithelial thyroid cancer development
- Evaluation of novel therapeutic and nutritional strategies for improving cardioprotective properties of HDL in mouse models of obesity, diabetes and cancer

# *National and international collaborations*

- Drs. Diego Gómez-Coronado y Miguel A. Lasunción. Hospital Ramón y Cajal y CIBEROBN, Madrid, Spain.
- Dr. Alberto Dávalos. IMDEA-Food. Madrid, Spain.
- Dr. Luís Masana. Hospital Sant Joan de Reus y Universitat Rovira i Virgili y CIBERDEM. Reus, Spain.
- Dr. Manuel Vázquez-Carrera. Universidad de Barcelona y CIBERDEM. Barcelona, Spain.
- Dra. Montserrat Fitó. IMIM y CIBEROBN. Barcelona, Spain.
- Dr. Jose Luís Martin-Ventura. Fundación Jimenez-Díaz y CIBERCV, Madrid, Spain.
- Drs. Fernando Civeira y Ana Cenarro. Hospital Clínico Universitario Miguel Servet y CIBERCV. Madrid, Spain.
- Dr. Petri Kovanen. Wihuri Research Institute. Helsinki, Finland.
- Dr. Matti Jauhiainen. National Institute for Health and Welfare. Helsinki, Finland.
- Dra. Annabel F. Valledor. Universidad de Barcelona. Barcelona, Spain.
- Dr. Srinu Reddy. Department of Medicine, UCLA. CA, US

# *Recent findings*

- ApoA-I mimetic administration, but not increased apoA-I-containing HDL, inhibits tumor growth in a mouse model of inherited breast cancer and human breast adenocarcinoma MCF-7 cells.
- Continuous positive airway pressure treatment improves glucose tolerance in morbidly obese patients with severe obstructive sleep apnea.
- Obesity impairs the main cardioprotective HDL function, the macrophage-to-feces reverse cholesterol transport in obese db/db mice, by downregulating hepatic ABCG5/G8 transporters. A favorable upregulation of the hepatic levels of ABCG5/G8 is found in morbid obese patients undergoing Roux-en-Y gastric bypass surgery.
- Although LXR regulates intestinal cholesterol absorption, the cholesterol-lowering effects of phytosterols occur in an LXR-independent manner.