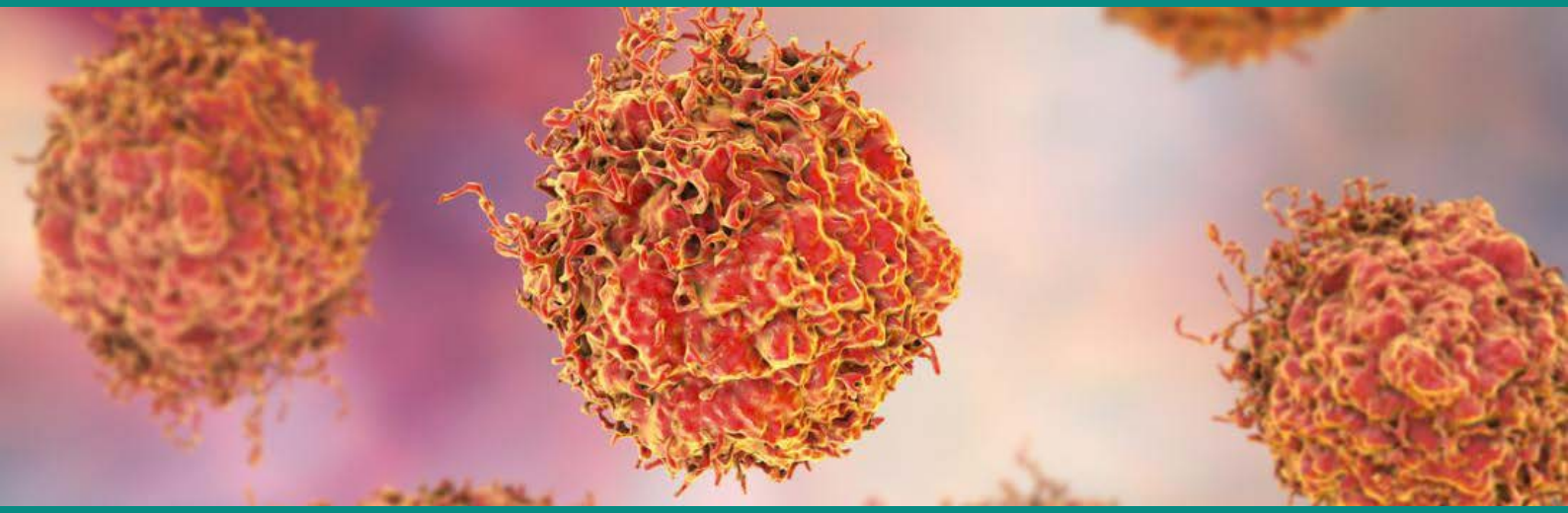
Programme

Cancer



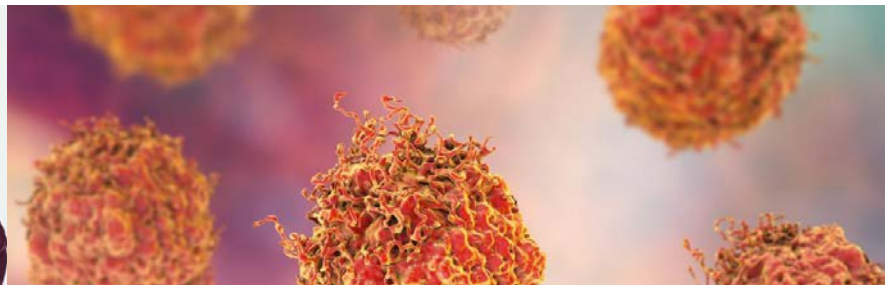
Cancer

12
Research groups

151
Professionals

48
Research projects

177
Publications



Programme Director
Joan Albanell Mestres

RESEARCH GROUPS

Applied Clinical Research in Hematological Malignances
Carles Besses

Colorectal Neoplasms Clinical and Translational Research
Xavier Bessa

Gastroesophageal Carcinogenesis
Manuel Ramón Pera

Genitourinary Cancer
Josep Lloreta

Localised Hyperthermia Therapies
Fernado Burdío

Mechanisms of Tumorigenesis and Tumor Progression
Antonio García de Herreros

Molecular Cancer Therapeutics
Joan Albanell

Molecular Mechanisms of Cancer and Stemness
Lluís Espinosa

Poly (ADP-ribose) Polymerases
José Yélamos

Radiation Oncology
Manuel Ignacio Algara

Stem Cells and Cancer
Anna Bigas

Translational Research on Hematological Neoplasms
Blanca Espinet

Main Programme Organization and Objectives

The programme includes basic, preclinical and clinical groups. Group leaders include basic scientists, digestologists, hematologists, immunologists, medical oncologists, radiation oncologists, pathologists, and surgeons, resulting in a multidisciplinary programme that allows undertaking collaborative projects focused on clinically relevant questions. The ultimate goal for this programme is to work at the interface between the laboratory and the clinic, with a priority in translational research.

10 groups (Albanell, Besses, Burdío, Yélamos, Espinet, Bessa, Bigas, Manuel Pera, García de Herreros, and Lloreta) are accredited by the Catalan Government (AGAUR).

In the transition from RTICC to CIBER, Anna Bigas and Joan Albanell groups play leading roles in the Molecular Mechanisms and "Breast Cancer programmes" respectively.

Overall Scientific Objectives and Strategy

We aim to provide novel discoveries that may help to advance personalized medicine across a number (but not limited to) of highly prevalent cancer types, including breast, colon, lung, pancreas, prostate and bladder cancers, as well as chronic myeloproliferative diseases and lymphoma. These diverse cancers represent well the main types in which our institute has both clinical and research expertise.

Our overall strategy includes: (i) Interrogate clinical specimens using high-throughput screening technologies and then go back to the lab, and (ii) Develop hypothesis-based studies in preclinical models and test salient findings in clinical specimens. The basic research groups should study and validate mechanistically the findings of the other groups and also provide translational hypothesis on their current main areas (EMT, NF-κB, oncogenic signalling, among others). We also incorporate, by means of collaboration with other programmes, immunology research (Inflammatory and Cardiovascular Disorders Programme), bioinformatics (Biomedical Informatics Programme) and epidemiology (Epidemiology and Public Health Programme).

We also develop clinical translational research in the fields of cancer role, personalized medicine across various tumor types, innovative surgical devices, and bone health in cancer survival, cardio-hematology and immunotherapy. We also have a growing phase I clinical programme.

Overall Technological Objectives

The aims are to develop novel biomarkers for cancer prevention, diagnosis and treatment selection, and develop novel therapeutic strategies, based on the discovery of novel mechanisms of cancer initiation or progression, as well as on translational and clinical studies. Surgeons also develop innovative technological surgical devices.

Overall Educational Objectives

The combination of researchers with different areas of training (basic, translational and clinical) aims to result in both scientists with a clinical perspective and clinicians that understand science. A number of internal and external collaborations are established, including national and international collaborations.

Applied Clinical Research in Hematological Malignances

Cancer

RESEARCH GROUP

Group Leader
Carles Besses Raebel

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Members

Beatriz Bellosillo Paricio (Researcher)
Eva Gimeno Vázquez (Researcher)
Carmen Jiménez Martínez (Researcher)
Eugènia Monreal Abella (Researcher)
Antonio Salar Silvestre (Researcher)
Blanca Sánchez González (Researcher)
Nieves García Gisbert (PhD Student)
Anna Angona Figueras (Technician)
Randa Ben Azaiz Ben Lahsen (Technician)
Francesc Garcia Pallarols (Technician)
Lierni Fernández Ibarrondo (Technician)
Joan Gibert Fernández (Technician)
María Elena Torres Grande Technician)

The group is studying molecular markers in chronic myeloproliferative neoplasms, mainly driver mutations but also mutations in epigenetic modifiers and genes involved in the splicing mechanism, and their role in monitoring the response to cytoreductive therapy and in patient outcome. In addition, the group is searching for new mutations using exome sequencing techniques in patients with essential thrombocythemia unmutated for JAK2, CALR and MPL genes. In addition, the role of circulating DNA as a tool to diagnose and monitor the response to therapy in myeloid neoplasms is an ongoing research project. Another area of research is the use of NGS and circulating DNA to study the prognostic role of mutations in follicular lymphoma patients in relation to response to therapy and the risk of transformation to large B-cell lymphoma. Another area of clinical research in lymphoma focuses on the usefulness of natriuretic peptides and cardiovascular risk scales for predicting anthracycline-induced cardiomyotoxicity in patients with diffuse large B-cell lymphoma.

Main Publications

- Connors JM, Jurczak W, Straus DJ, Ansell SM, Kim WS, Gallamini A, Younes A, Alekseev S, Illés Á, Picardi M, Lech-Maranda E, Oki Y, Feldman T, Smolewski P, Savage KJ, Bartlett NL, Walewski J, Chen R, Ramchandren R, Zinzani PL, Cunningham D, Rosta A, Josephson NC, Song E, Sachs J, Liu R, Jolin HA, Huebner D, Radford J, ECHELON-1 Study Group (...Sánchez-González B...). Brentuximab Vedotin with Chemotherapy for Stage III or IV Hodgkin's Lymphoma. New Engl J Med 2018; 378(4): 331-344. IF 79.258. D1.
- Clot G, Jares P, Giné E, Navarro A, Royo C, Pinyol M, Martín-Garcia D, Demajo S, Espinet B, Salar A, Ferrer A, Muntañola A, Aymerich M, Rauert-Wunderlich H, Jaffe ES, Connors JM, Gascoyne RD, Delabie J, López-Guillermo A, Ott G, Wright GW, Staudt LM, Rosenwald A, Scott DW, Rimsza LM, Beà S, Campo E. A new molecular assay and genomic complexity predict outcome in conventional and leukemic non-nodal mantle cell lymphoma. Blood 2018; 132(4): 413-422. IF 15.132. D1.
- Karube K, Enjuanes A, Dlouhy I, Jares P, MartÍn-Garcia D, Nadeu F, Ordóñez GR, Rovira J, Clot G, Royo C, Navarro A, González-Farré B, Vaghefi A, Castellano G, Rubio-Pérez C, Tamborero D, Briones J, Salar A, et al. Integrating genomic alterations in diffuse large B-cell lymphoma identifies new relevant pathways and potential therapeutic targets. Leukemia 2018; 32(3): 675-684. IF 10.023. D1.
- Hernández-Boluda JC, Pereira A, Correa JG, Álvarez-Larran A, Ferrer-Marín F, Raya JM, Martínez-López J, Pérez-Encinas M, Estrada N, Vélez P, Fox ML, García-Gutiérrez V, Payer A, Kerguelen A, Cuevas B, Durán MA, Ramírez MJ, Gómez-Casares MT, Mata-Vázquez MI, Mora E, Martínez-Valverde C, Gómez M, Cervantes F, on behalf of the Grupo Español de Enfermedades Mieloproliferativas Filadelfia Negativas (GEMFIN). Performance of the myelofibrosis secondary to PV and ET-prognostic model (MYSEC-PM) in a series of 262 patients from the Spanish registry of myelofibrosis. Leukemia 2018; 32(2): 553-555. IF 10.023. D1.
- Birgegard G, Besses C, Griesshammer M, Gugliotta L, Harrison CN, Hamdani M, Wu J, Achenbach H, Kiladjian JJ. Treatment of essential thrombocythemia in Europe: a prospective long-term observational study of 3649 high-risk patients in the EXELS study. Haematologica 2018; 103(1): 51-60. IF 9.09. D1.
- Solans M, Castelló A, Benavente Y, Marcos-Gragera R, Amiano P, Gràcia-Lavedan E, Costas L, Robles C, González-Barca E, De la Banda E, Alonso E, Aymerich M, Campo E, Dierssen-Sotos T, Fernández-Tardón G, Olmedo-Requena R, Gimeno E, Castaño-Vinyals G, Aragonés N, Kogevinas M, de Sanjosé S, Pollán M, Casabonne D. Adherence to the Western, Prudent, and Mediterranean dietary patterns and chronic lymphocytic leukemia in the MCC-Spain study. Haematologica 2018; 103(11): 1881-1888. IF 9.09. D1.
- Hernández-Boluda JC, Pereira A, Pastor-Galán I, Álvarez-Larrán A, Savchuk A, Puerta JM, Sánchez-Pina JM, Collado R, Díaz-González A, Angona A, et al. Feasibility of treatment discontinuation in chronic myeloid leukemia in clinical practice: results from a nationwide series of 236 patients. Blood Cancer J 2018; 8(10): 91. IF 8.125. D1.

- Blanco G, Vardi A, Puiggrós A, Gómez-Llonín A, Muro M, Rodríguez-Rivera M, Stalika E, Abella E, Gimeno E, López-Sánchez M, Senín A, Calvo X, Abrisqueta P, Bosch F, Ferrer A, Stamatopoulos K, Espinet B. Restricted T cell receptor repertoire in CLL-like monoclonal B cell lymphocytosis and early stage CLL. OncoImmunology 2018; 7(6): e1432328. IF 5.503. Q1.
- Hernández-Boluda JC, Correa JG, Álvarez-Larrán A, Ferrer-Marín F, Raya JM, Martínez-López J, Vélez P, Pérez-Encinas M, Estrada N, García-Gutiérrez V, et al. Clinical characteristics, prognosis and treatment of myelofibrosis patients with severe thrombocytopenia. Br J Haematol 2018; 181(3): 397-400. IF 5.128. Q1.
- Montalbán C, Díaz-López A, Martín A, Baile M, Sánchez JM, Sancho JM, García O, Novelli S, Monter-Rovira A, Salar A, et al. Differential prognostic impact of GELTAMO-IPI in cell of origin subtypes of Diffuse Large B Cell Lymphoma as defined by the Hans algorithm. Br J Haematol 2018; 182(4): 534-541. IF 5.128. Q1.

Ongoing Research Projects

- Caracterización molecular de las neoplasias mieloides a partir del ADN tumoral circulante
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI16/00153)
  - Period: from 2017 to 2019
  - Principal investigator: Bellosillo Paricio, Beatriz
- Caracterización mediante secuenciación masiva de las mutaciones asociadas con fallo precoz al tratamiento de primera línea en linfoma folicular
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI15/00459)
  - Period: from 2016 to 2020
  - Principal investigator: Salar Silvestre, Antonio
- Molecular characterization of myeloid malignancies in tumoral circulating free DNA and exosomes
  - Financing institution: Gilead España GLD16/00064
  - Period: from 2016 to 2018
  - Principal investigator: Besses Raebel, Carles
- Caracterización de la trombocitemia esencial jak2v617f y mpl negativa mediante secuenciación del exoma.
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII PI13/00393
  - Period: from 2014 to 2018
  - Principal investigator: Bellosillo Paricio, Beatriz

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Grup de Recerca Aplicada en Hematologia (2017 to 2020)
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 205)
  - Principal investigator: Besses Raebel, Carles

Clinical Trials Signed in 2018

- Ensayo clínico fase Ib/II de ruxolitinib en combinación con nilotinib y prednisona para mielofibrosis: Estudio RuNiC
  - Register: RuNiC
  - Principal investigator: Angona Figueras, Anna
- Estudio observacional, internacional, multicéntrico, sobre el uso de ruxolitinib en el tratamiento de pacientes con policitemia vera que presentan resistencia o intolerancia a la hidroxiurea
  - Register: CINC424BIC04/NOV-RUX-2017-01
  - Principal investigator: Angona Figueras, Anna
- An International, Phase 3, Open-label, Randomized Study of BGB-3111 Compared with Bendamustine plus Rituximab in Patients with Previously Untreated Chronic Lymphocytic Leukemia or Small Lymphocytic Lymphoma
  - Register: BGB-3111-304
  - Principal investigator: Gimeno Vázquez, Eva
- A Phase 1b, Dose Escalation Study to Determine the Recommended Phase 2 Dose of TAK-659 in Combination With Bendamustine (±Rituximab), Gemcitabine, Lenalidomide, or Ibrutinib for the Treatment of Patients With Advanced Non-Hodgkin Lymphoma After At Least 1 Prior Line of Therapy
  - Register: C34005
  - Principal investigator: Salar Silvestre, Antonio
- Estudio de fase II, abierto, de 2 cohortes y multicéntrico de INCB050465, un inhibidor de PI3Kδ, en linfoma de células del manto en recidiva o resistente al tratamiento, previamente tratado con o sin un inhibidor de la BTK (CITADEL-205)
  - Register: INCB 50465-205
  - Principal investigator: Sánchez González, Blanca
- Estudio observacional retrospectivo del tratamiento del Linfoma de Células del Manto (LCM) con Ibrutinib en la práctica clínica habitual
  - Register: JAN-IBR-2017-01
  - Principal investigator: Salar Silvestre, Antonio

- Respuesta inmunitaria a la vacuna de la gripe en pacientes con neoplasias malignas de células B tratados con idelalisib
  - Register: GS-US-313-4100
  - Principal investigator: Salar Silvestre, Antonio
- Estudio retrospectivo sobre el tratamiento en primera línea del Mieloma Múltiple, en pacientes de nuevo diagnóstico no candidato a trasplante de 2012 a 2016 según práctica clínica habitual en España - Estudio RETRO
  - Register: CEL-MIE-2018-01
  - Principal investigator: Abella Monreal, Eugenia
- Estudio observacional para describir el impacto de las combinaciones de tratamiento con Daratumumab frente a otros tratamientos alternativos en pacientes con mieloma múltiple en recaída / refractario (MMRR). Datos de práctica
  - Register: JAN-DAR-2018-01
  - Principal investigator: Abella Monreal, Eugenia
- A Phase 3 Study Comparing Daratumumab, VELCADE (bortezomib), Lenalidomide, and Dexamethasone (D-VRd) with VELCADE, Lenalidomide, and Dexamethasone (VRd) in Subjects with Untreated Multiple Myeloma and for Whom Hematopoietic Stem Cell Transplant is Not Planned as Initial Therapy
  - Register: 54767414MMY3019
  - Principal investigator: Abella Monreal, Eugenia
- Estudio de fase II abierto, aleatorizado, de búsqueda de la dosis de pacritinib en pacientes con mielofibrosis primaria, mielofibrosis posterior a policitemia vera o mielofibrosis posterior a trombocitemia idiopática tratados previamente con ruxolitinib
  - Register: PAC203
  - Principal investigator: Angona Figueras, Anna

Colorectal Neoplasms Clinical and Translational Research

Group Leader
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Members

Sandra Alonso Gonçálvez (Researcher)
Marco Antonio Álvarez González (Researcher)
Cristina Álvarez Urturi (Researcher)
Josep Maria Dedeu Cuscó (Researcher)
Luís Grande Posa (Researcher)
Lucas Ilzarbe Sánchez (Researcher)
Xavier Mayol Girbau (Researcher)
Lucía Márquez Mosquera (Researcher)
Marta Pascual Damieta (Researcher)
Miguel Pera Román (Researcher)
Fausto Riu Pons (Researcher)
Silvia Salvans Ruiz (Researcher)
Agustín Seoane Urgorri (Researcher)
M. Francisca Murciano Gonzalo (Technician)
Noemí Rodríguez Fernández (Technician)

The main strategic objective is to further our understanding of the pathogenesis of various neoplastic colorectal processes, from polyps to colorectal cancer, as well as their prevention and treatment. Our research focuses on identifying the factors relating to the development of metachronous neoplastic lesions, particularly advanced colorectal adenomas, to improve patient monitoring, and study how the inflammatory response to surgery influences the oncological outcome, identifying disease progression biomarkers in patients with colorectal cancer. Ongoing projects are:

1) Optimization of the surveillance of colon polyps. Development of an index for the risk of recurrence based on environmental, clinical, morphological, histological and molecular factors.

2) Prevention of colorectal cancer in the intermediate-risk population by means of genomic and microbiomic biomarkers (CRIPREV) PERIS (SLT002 / 16/00398).
3) Identification of epigenetic markers of colorectal cancer progression in a prospective population cohort of colorectal cancer (CRC) patients.
4) Validation of postoperative serum levels of VEGF as a predictive biomarker of recurrence after surgery in patients with CRC who have undergone surgery with curative intent (FAECP grant).
5) Metabolic phenotyping of patients with CRC who have undergone surgery with curative intent to develop a profile of metabolites as predictive biomarkers of recurrence (ISCIII grant).

Main Publications

- Carballal S, Maisterra S, López-Serrano A, Gimeno-García AZ, Vera MI, Marín-Garbriel JC, Díaz-Tasende J, Márquez L, Álvarez-González MA, Hernández L, et al. Real-life chromoendoscopy for neoplasia detection and characterisation in long-standing IBD. Gut 2018; 67(1): 70-78. IF 17.016. D1.
- Ordás I, Domènech E, Mañosa M, García-Sánchez V, Iglesias-Flores E, Rodríguez-Moranta F, Márquez L, Merino O, Fernández-Bañares F, Gomollón F, et al. Post-operative morbidity and mortality of a cohort of steroid refractory acute severe ulcerative colitis: Nationwide multicenter study of the GETECCU ENEIDA Registry. Am J Gastroenterol 2018; 113(7): 1009-1016. IF 10.231. D1.
- Murcia O, Jover R, Egoavil CM, Juárez M, Pérez-Carbonell L, Hernández-Illán E, Rojas E, Alenda C, Balaguer F, Andreu M, Llor X, Castells A, Boland CR, Goel A. TFAP2E Methylation and Expression Status Does Not Predict Response to 5FU-based Chemotherapy in Colorectal Cancer. Clin Cancer Res 2018; 24(12): 2820-2827. IF 10.199. D1.
- Poves I, Burdío F, Morató O, Iglesias M, Radosevic A, Ilzarbe L, Visa L, Grande L. Comparison of Perioperative Outcomes Between Laparoscopic and Open Approach for Pancreatoduodenectomy: The PADULAP Randomized Controlled Trial. Ann Surg 2018; 268(5): 731-739. IF 9.203. D1.
- Rodríguez-Alcalde D, Carballal S, Moreira L, Hernández L, Rodríguez-Alonso L, Rodríguez-Moranta F, Gonzalo V, Bujanda L, Bessa X, Poves C, et al. High incidence of advanced colorectal neoplasia during endoscopic surveillance in serrated polyposis syndrome. Endoscopy 2018; 51(2): 142-151. IF 6.629. D1.
- Marcuello M, Mayol X, Felipe E, Costa J, López-Hierro L, Salvans S, Alonso S, Pascual M, Grande L, Pera M. Modulation of the colon cancer cell phenotype by pro-inflammatory macrophages: A preclinical model of surgery-associated inflammation and tumor recurrence. PLoS ONE 2018; 13(2): e0192958. IF 2.766. Q1.

- Baré M, Mora L, Torà N, Gil MJ, Barrio I, Collera P, Suárez D, Redondo M, Escobar A, Fernández de Larrea N, Quintana JM; CCR-CARESS Study Group (Pera M...). CCR-CARESS score for predicting operative mortality in patients with colorectal cancer. Br J Surg 2018; 105(13):1853-1861. IF 2.432. D1.

Ongoing Research Projects

- Repetición de una preparación intestinal en pacientes con colonoscopias con preparación inadecuada. Estudio Repeat-Prep.
  - Financing institution: Asociación Española de Gastroenterología (AEG)
  - Period: from 2017 to 2018
  - Principal investigator: Álvarez González, Marco Antonio
- Concentración postoperatoria del VEGF como factor pronóstico de recurrencia tras cirugía curativa de cáncer de colon. Estudio multicéntrico
  - Financing institution: Fundación Asociación Española de Coloproctología (FAECP)
  - Period: from 2017 to 2018
  - Principal investigator: Pascual Damieta, Marta
- Early biomarkers in circulating a 4B7 + T cells to predict response to Vedolizumab in inflammatory bowel disease patients
  - Financing institution: Takeda Pharmaceutical. IISR-2016-101479
  - Period: from 2016 to 2019
  - Principal investigator. Márquez Mosquera, Lucía
- Biomarcadores pronósticos de recurrencia tras cirugía del cáncer colorrectal: Estudio de los cambios metabólicos y del contenido proteico y de miRNA de las vesículas extracelulares
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI15/00458)
  - Period: from 2016 to 2019
  - Principal investigator: Pera Román, Miguel
- Optimización de la vigilancia de lesiones adenomatosas y serradas de colon. Elaboración de un índice de riesgo de recidiva mediante factores ambientales, clínicos, morfológicos, histológicos y moleculares
  - Financing institution: Asociación Española Contra el Cáncer-AECC (PS14152544ANDR)
  - Period: from 2015 to 2018
  - Principal investigator: Andreu García, Montserrat

- Optimización de la vigilancia de lesiones adenomatosas y serradas de colon. Desarrollo de un índice de riesgo de recidiva mediante factores ambientales, clínicos, morfológicos, histológicos y moleculares
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI14/00441)
  - Period: from 2015 to 2018
  - Principal investigator: Andreu García, Montserrat
- Infección peritoneal postoperatoria y recurrencia del cáncer colorrectal. Estudio de los cambios en el metabolismo energético de las células tumorales como mecanismo responsable de esta asociación
  - Financing institution: Fundación Mutua Madrileña (AP150582014)
  - Period: from 2014 to 2018
  - Principal investigator: Pascual Damieta, Marta

Participation in Research Networks

- Prevenció del càncer colorectal en la població de risc mitjà mitjançant biomarcadors genòmics i microbiòmics. PT 9. Coordinació de la fase pilot de l'estudi
  - PERIS (SLT002/16/00398) 2016-2010
  - Principal Investigador (WP): Bessa i Caserras, Xavier
- European Society of Coloproctology Cohort Studies
  - Investigators: Marta Pascual, Sandra Alonso, Silvia Salvans, Marta Jiménez-Toscano, Miguel Pera

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Grup de Recerca Clínica i Translacional en Neoplàsies Colorectals (2017-2020)
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 80)
  - Principal investigator: Bessa Casserras, Xavier

Clinical Trials Signed in 2018

- Suspensión del tratamiento Anti_TNF en pacientes con enfermedad inflamatoria intestinal: Ensayo clínico multicéntrico, prospectivo y aleatorizado.
  - Register: GIS-SUSANTI-TNF-2015
  - Principal investigator: Márquez Mosquera, Lucía

- Eficacia de los bolos intravenosos de corticoides más tratamiento con corticoides orales en comparación con corticoides orales en monoterapia para el tratamiento de la colitis ulcerosa moderada: ensayo clínico multicéntrico y aleatorizado.
  - Register: CECUM
  - Principal investigator: Márquez Mosquera, Lucía
- Estudio de fase IIIb, multicéntrico, aleatorizado, ciego y controlado con fármaco activo para comparar la eficacia y seguridad de ustekinumab frente a adalimumab en el tratamiento de pacientes con enfermedad de Crohn con actividad moderada o grave previamente no tratados con fármacos biológicos.
  - Register: CNTO1275CRD3007
  - Principal investigator: Andreu García, Montserrat
- Colorectal Cancer Omics Collection
  - Register: CRC-OC-001
  - Principal investigator: Bessa Caserras, Xavier

Gastroesophageal Carcinogenesis

Cancer RESEARCH GROUP

Group Leader
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Members

Gabriel Gil Gómez (Researcher)
Mar Iglesias Coma (Researcher)
Marta Garrido Saldaña (Technician)

The sequential process prior to the appearance of a gastric or esophageal adenocarcinoma is a sequential histologically well-defined process characterized by the appearance of an intestinal phenotype. In the first stages of gastro-esophageal carcinogenesis the expression of intestinal markers, as intestinal transcription factors (CDX2), mucin genes (MUC2 and MUC4), intestinal enzymes and others, can be detected. We study the molecular mechanisms that can be initiating these processes, through the regulation of transcription factors inducing the acquisition of the intestinal phenotype. In the esophagus, the development of columnar metaplasia (Barrett's esophagus) is a response to a chronic gastroesophageal reflux injury and is a major risk factor for esophageal adenocarcinoma. Patients undergoing esophagectomy with a gastric conduit reconstruction develop columnar metaplasia in the remnant esophagus on a background of significant reflux, providing a useful model to study the early molecular events in the development of Barrett's esophagus. MiRNAs expression profiles may identify a characteristic signature that could distinguish between normal squamous epithelium, esophagitis, cardiac-type epithelium, and intestinal metaplasia. A group of miRNAs may selectively target specific transcriptional factors (CDX2) involved in the Barrett's development.

Main Publications

- Tauriello DVF, Palomo-Ponce S, Stork D, Berenguer-Llergo A, Badia-Ramentol J, Iglesias M, Sevillano M, Ibiza S, Cañellas A, Hernando-Momblona X, Byrom D, Matarín JA, Calon A, Rivas EI, Nebreda AR, Riera A, Attolini CS, Batlle E. TGFβ drives immune evasion in genetically reconstituted colon cancer metastasis. Nature 2018; 554(7693): 538-543. IF 41.577. D1.
- López-Arribillaga E, Rodilla V, Colomer C, Vert A, Shelton A, Cheng JH, Yan B, González-Pérez A, Junttila MR, Iglesias M, Torres F, Albanell J, Villanueva A, Bigas A, Siebel CW, Espinosa L. Manic Fringe deficiency imposes Jagged1 addiction to intestinal tumor cells. Nat Commun 2018; 9(1): 2992. IF 12.353. D1.
- Gallardo F, Bertran J, López-Arribillaga E, González J, Menéndez S, Sánchez I, Colomo L, Iglesias M, Garrido M, Santamaría-Babí LF, Torres F, Pujol RM, Bigas A, Espinosa L. Novel phosphorylated TAK1 species with functional impact on NF-κB and β-catenin signaling in human Cutaneous T-cell lymphoma. Leukemia 2018; 32(10): 2211-2223. IF 10.023. D1.
- Prieto C, López-Millán B, Roca-Ho H, Stam RW, Romero-Moya D, Rodríguez-Baena FJ, Sanjuan-Pla A, Ayllón V, Ramírez M, Bardini M, De Lorenzo P, Valsecchi MG, Stanulla M, Iglesias M, Ballerini P, Carcaboso ÁM, Mora J, Locatelli F, Bertaina A, Padilla L, Rodríguez-Manzaneque JC, Bueno C, Menéndez P. NG2 antigen is involved in leukemia invasiveness and central nervous system infiltration in MLL-rearranged infant B-ALL. Leukemia 2018; 32(3): 633-644. IF 10.023. D1.
- Orozco CA, Martínez-Bosch N, Guerrero PE, Vinaixa J, Dalotto-Moreno T, Iglesias M, Moreno M, Djurec M, Poirier F, Gabius HJ, Fernández-Zapico ME, Hwang RF, Guerra C, Rabinovich GA, Navarro P. Targeting galectin-1 inhibits pancreatic cancer progression by modulating tumor-stroma crosstalk. Proc Natl Acad Sci U S A 2018; 115(16): E3769-E3778. IF 9.504. D1.
- Poves I, Burdío F, Morató O, Iglesias M, Radosevic A, Ilzarbe L, Visa L, Grande L. Comparison of Perioperative Outcomes Between Laparoscopic and Open Approach for Pancreatoduodenectomy: The PADULAP Randomized Controlled Trial. Ann Surg 2018; 268(5): 731-739. IF 9.203. D1.
- Molina-Montes E, Gómez-Rubio P, Márquez M, Rava M, Löhr M, Michalski CW, Molero X, Farré A, Perea J, Greenhalf W, et al. Risk of pancreatic cancer associated with family history of cancer and other medical conditions by accounting for smoking among relatives. Int J Epidemiol 2018; 47(2): 473-483. IF 8.36. D1.
- Lo Re D, Montagner D, Tolan D, Di Sanza C, Iglesias M, Calon A, Giralt E. Increased immune cell infiltration in patient-derived tumor explants treated with Traniplatin: an original Pt(iv) pro-drug based on Cisplatin and Tranilast. Chem Commun 2018; 54(60): 8324-8327. IF 6.29. Q1.
- López-Millán B, Díaz de la Guardia R, Roca-Ho H, Anguita E, Islam ABMMK, Romero-Moya D, Prieto C, Gutiérrez-Agüera F, Bejarano-García JA, Pérez-Simon JA, Costales P, Rovira M, Marín P, Menéndez S, Iglesias M, Fuster JL, Urbano-Ispizua A, Anjos-Afonso F, Bueno C, Menéndez P. IMiDs mobilize acute myeloid leukemia blasts to peripheral blood through downregulation of CXCR4 but fail to potentiate AraC/Idarubicin activity in preclinical models of non del5q/5q- AML. OncoImmunology 2018; 7(9): e1477460. IF 5.503. Q1.

- Gasull M, Pumarega JA, Kiviranta H, Rantakokko P, Raaschou-Nielsen O, Bergdahl IA, Sandanger TM, Goñi F, Cirera L, Donat-Vargas C, et al. Methodological issues in a prospective study on plasma concentrations of persistent organic pollutants and pancreatic cancer risk within the EPIC cohort. Environ Res 2018; 169: 417-433. IF 4.732. D1.

Ongoing Research Projects

- Impacto de la fragilidad sobre los resultados postoperatorios de la cirugía del cáncer gástrico [TOREGA]
  - Financing institution: Asociación Española de Cirujanos
  - Period: from 2018 to 2019
  - Principal investigator: Pera Román, Manuel Ramón
- Regulación de CDX2 por miRNAs durante el proceso de intestinalización de la metaplasia cardial en un modelo humano de esófago de Barrett
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI13/00989)
  - Period: from 2014 to 2018
  - Principal investigator: Pera Román, Manuel Ramón
- Autoinmunidad, inflamación, y cáncer: el papel mediador de la Ciclina O y su posible aplicación clínica como indicador temprano de transformación tumoral
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI13/00864)
  - Period: from 2014 to 2018
  - Principal investigator: Gil Gómez, Gabriel

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Grup de Recerca en Carcinogènesi Gastroesofàgica i Inestabilitat Genòmica (2017-2020)
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 51)
  - Principal investigator: Pera Román, Manuel Ramón

Clinical Trials Signed in 2018

- A Phase 3, Global Multi-Center, Double-Blind, Randomized, Efficacy Study of IMAB362 Plus mFOLFOX6 Compared with Placebo Plus mFOLFOX6 as First-line Treatment of Subjects with Claudin (CLDN)18.2-Positive, HER2-Negative, Metastatic Gastric or Gastroesophageal Junction (GEJ) Adenocarcinoma.
  - Register: 8951-CL-0301
  - Principal investigator: Visa Turmo, Laura

- Estudio de fase 3, aleatorizado, controlado, abierto y global, comparativo de la eficacia de BGB-A317, un anticuerpo anti-PD-1, frente a quimioterapia como segunda línea de tratamiento en pacientes con carcinoma esofágico epidermoide avanzado no resecable/metastásico.
  - Register: BGB-A317-302
  - Principal investigator: Visa Turmo, Laura
- Estudio de fase 3, en doble ciego y aleatorizado, de BGB-290 frente a placebo como tratamiento de mantenimiento en pacientes con cáncer gástrico localmente avanzado o metastásico, inoperable, que han respondido a una quimioterapia de primera línea basada en el platino.
  - Register: BGB-290-303
  - Principal investigator: Visa Turmo, Laura

Other

- Manuel Pera was appointed Full Professor (Catedrático) in the Universitat Autònoma de Barcelona. October 2018
- Manuel Pera was elected External Examiner at the Trinity College, Dublin, Ireland.
- Manuel Pera was elected Honorary Fellow of the Royal College of Surgeons of Edinburgh. November 2018
- Manuel Pera was elected member of the International Surgical Group (ISG). October 2018
- Manuel Pera was re-elected Director, Executive Committee of the International Society for Diseases of the Esophagus (ISDE). November 2018.
- Extraordinary Doctorate Award 2018 to the student Marta Climent Agustín for her thesis “Resección con pretensión curativa del cáncer gástrico: Influencia de las complicaciones postoperatorias sobre la supervivencia y de la pérdida de peso sobre la calidad de vida”.
- Extraordinary Doctorate Award 2018 to the student Yusmeli Salazar-Silva for her thesis “Prótesis de rodilla dolorosa. relación entre la analgesia endógena ineficiente y el dolor postquirúrgico persistente”.

Genitourinary Cancer

Group Leader
Josep Lloreta Trull

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Members

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Lluís Cecchini Rosell (Researcher)
Albert Francés Comalat (Researcher)
Lluís Fumadó Ciutat (Researcher)
Silvia Hernández Llodrà (Researcher)
Núria Juanpere Rodero (Researcher)
Gloria Nohales Taurines (Researcher)
Marta Lorenzo Pérez (Technician)

Prostate cancer is the most common non-cutaneous cancer in men, and urinary bladder cancer is the fourth most common overall in both sexes. In addition to their prevalence, there are specific features of their respective natural histories that make them two of the cancers that generate some of the highest economic costs and they are associated with high morbidity rates, thus both have a significant impact on patients' quality of life and on health care costs. These are two different models of carcinogenesis, reflecting diverse aspects of cancer biology. Two major pathways with different molecular, pathological and clinical profiles are well known in bladder cancer. A further advance relies on the identification of several specific molecular subclasses similar to those identified in breast cancer. Also in prostate cancer, the relatively unpredictable behavior of the disease appears to be related to different molecular subfamilies, namely, the complex subset of translocation-associated tumors, and the as yet poorly defined miscellaneous group of tumors not related to gene rearrangements. Furthermore, in both tumors, it has been suggested that inflammatory and immunological responses may be involved in their initiation and progression and these are regarded as new avenues for therapeutic intervention. In both tumors, there is a high demand for markers of early diagnosis, follow-up, and response to therapy, as well as for new

therapeutic targets and for parameters that allow a more personalized management of patients. Our objectives are to identify genetic signatures that may be involved in the transition from a hypothetical latent phase to a clinically significant phase, as well as markers of progression and advanced disease, in order to better understand the natural history of bladder and prostatic carcinoma and to design adequate treatment strategies for early detection, monitoring, treatment stratification, and follow-up, tailored for the personalized management of each patient.

Main Publications

- Kanesvaran R, Saux OL, Motzer R, Choueiri TK, Scotté F, Bellmunt J, Launay-Vacher V. Elderly patients with metastatic renal cell carcinoma: position paper from the International Society of Geriatric Oncology. Lancet Oncol 2018; 19(6): e317-e326. IF 36.418. D1.
- Bellmunt J, Nadal R. Urothelial cancer in 2017: Changes in expectations for metastatic urothelial carcinoma. Nat Rev Clin Oncol 2018; 15(2): 73-74. IF 24.653. D1.
- Rodríguez-Vida A, Pérez-Gracia JL, Bellmunt J. Immunotherapy Combinations and Sequences in Urothelial Cancer: Facts and Hopes. Clin Cancer Res 2018; 24(24): 6115-6124. IF 10.199. D1.
- Bellmunt J, Lalani AA, Jacobus S, Wankowicz SA, Polacek L, Takeda DY, Harshman LC, Wagle N, Moreno I, Lundgren K, Bossé D, Van Allen EM, Choueiri TK, Rosenberg JE. Everolimus and pazopanib (E/P) benefit genomically selected patients with metastatic urothelial carcinoma. Br J Cancer 2018; 119(6): 707-712. IF 5.922. Q1.
- Castelló A, Boldo E, Amiano P, Castaño-Vinyals G, Aragonés N, Gómez-Acebo I, Peiró R, Jiménez-Moleón JJ, Alguacil J, Tardón A, Cecchini L, Lope V, Dierssen-Sotos T, Mengual L, Kogevinas M, Pollán M, Pérez-Gómez B, MCC-Spain researchers. Mediterranean dietary pattern is associated to low risk of aggressive prostate cancer: MCC-Spain study. J Urol 2018; 199(2): 430-437. IF 5.381. Q1.
- Sonpavde GP, Mariani L, Lo Vullo S, Raggi D, Giannatempo P, Bamias A, Crabb SJ, Bellmunt J, Yu EY, Niegisch G, Vaishampayan UN, Theodore C, Berthold DR, Srinivas S, Sridhar SS, Plimack ER, Rosenberg JE, Powles T, Galsky MD, Necchi A. Impact of the number of cycles of platinum-based first-line chemotherapy for advanced urothelial carcinoma. J Urol 2018; 200(6): 1207-1214. IF 5.381. Q1.
- Baena-Díez JM, Subirana I, Ramos R, Gómez de la Cámara A, Elosua R, Vila JS, Marín-Ibáñez A, Guembe MJ, Rigo F, Tormo-Díaz MJ, et al. Evaluación de la validez de las funciones SCORE de bajo riesgo y calibrada para población española en las cohortes FRESCO. Rev Esp Cardiol 2018; 71(4): 274-282. IF 5.166. Q1.
- Mena M, Taberna M, Tous S, Márquez S, Clavero O, Quiros B, Lloveras B, Alejo M, León X, Quer M, Bagué S, Mesia R, Nogués J, Gomà M, Águila A, Bonfill T, Blázquez C, Guix M, Hijano R, Torres M, Holzinger D, Pawlita M, Pavón MA, Bravo IG, de Sanjosé S, Bosch FX, Alemany L. Double positivity for HPV-DNA/p16ink4a is the biomarker

with strongest diagnostic accuracy and prognostic value for human papillomavirus related oropharyngeal cancer patients. Oral Oncol 2018; 78: 137-144. IF 4.636. D1.

- Subirana I, Fitó M, Díaz O, Vila JS, Francés A, Delpon E, Sanchis J, Elosua R, Muñoz D, Degano IR, Marrugat J. Prediction of coronary disease incidence by biomarkers of inflammation, oxidation, and metabolism. Sci Rep 2018; 8(1): 3191. IF 4.122. Q1.
- Guitart M, Lloreta J, Mañas-García L, Barreiro E. Muscle regeneration potential and satellite cell activation profile during recovery following hindlimb immobilization in mice. J Cell Physiol 2018; 233(5): 4360-4372. IF 3.923. Q1.

Ongoing Research Projects

- Identificación prospectiva de predictores biológicos al tratamiento con inhibidores de PD-1/PD-L1 en cáncer de vejiga avanzado y cáncer de próstata avanzado resistente a la castración.
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI16/00112)
  - Period: from 2017 to 2019
  - Principal investigator: Bellmunt Molins, Joaquim
- Validación clínica y mecanismos de acción de las alteraciones moleculares con valor predictivo de progresión en el cáncer de próstata: algoritmo molecular de la carcinogénesis prostática.
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI15/00452)
  - Period: from 2016 to 2019
  - Principal investigator: Lloreta Trull, Josep

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Grup de Recerca en Càncer Urològic (GRECU) (2017-2020)
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 275)
  - Principal investigator: Lloreta Trull, Josep

Clinical Trials Signed in 2018

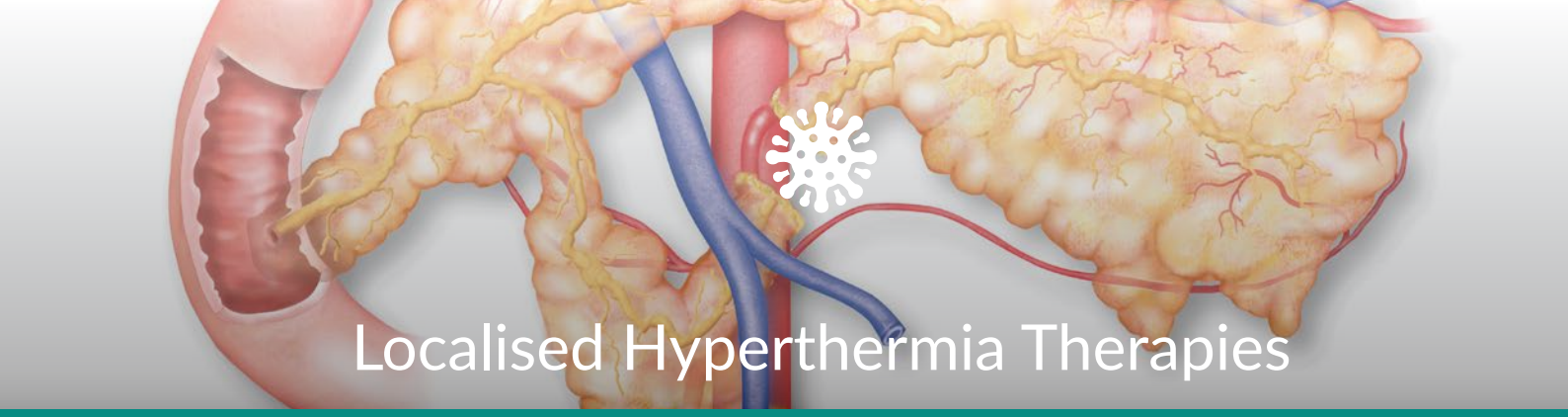
- Estudio de fase III, aleatorizado y abierto para evaluar la eficacia y la seguridad de pembrolizumab (MK-3475) más epacadostat frente al tratamiento de referencia (sunitinib o pazopanib) para el tratamiento de primera línea del carcinoma renal
  - Register: MK-3475-679/ECHO-302
  - Principal investigator: Rodríguez-Vida Rodríguez, Alejo

- Estudio clínico de fase 3 aleatorizado y doble ciego de pembrolizumab + epacadostat frente a pembrolizumab + placebo para el tratamiento del carcinoma urotelial metastásico recurrente o progresivo en pacientes que no han respondido
  - Register: MK-3475-698/ECHO-303
  - Principal investigator: Rodríguez-Vida Rodríguez, Alejo
- Análisis retrospectivo de factores clínicos asociados a un mayor beneficio con Axitinib en Cáncer Renal metastásico (Estudio AXILONG)
  - Register: A4061089 / PFI-AXI-2017-01
  - Principal investigator: Rodríguez-Vida Rodríguez, Alejo
- Phase II Study of Paclitaxel and TAK-228 in metastatic urothelial carcinoma (UC) and the impact of PI3K-mTOR pathway genomic alterations
  - Register: X31005
  - Principal investigator: Rodríguez-Vida Rodríguez, Alejo
- Estudio de fase II, multicéntrico, aleatorizado y abierto para evaluar la seguridad y la eficacia de avelumab con gemcitabina/carboplatino frente a quimioterapia con gemcitabina/carboplatino sola, en pacientes con carcinoma urotelial no resecable o metastásico que no hayan recibido terapia sistémica previa y que no sean aptos para la quimioterapia con cisplatino
  - Register: MS100070_0160
  - Principal investigator: Rodríguez-Vida Rodríguez, Alejo
- Estudio fase Ib de avelumab junto con carboplatino en pacientes con cáncer de próstata metastásico resistente a la castración en progresión tras como mínimo una línea de quimioterapia y una línea de nuevos agentes dirigidos contra la vía de señal del receptor androgénico
  - Register: APRO06-2017
  - Principal investigator: Rodríguez-Vida Rodríguez, Alejo
- Estudio de fase 2/3 b aleatorizado, abierto, multicéntrico para evaluar la eficacia y seguridad de Rogaratinib (BAY 1163877) comparado con quimioterapia en pacientes FGFR positivo con carcinoma urotelial metastásico o localmente avanzado que hayan recibido previamente quimioterapia con platino
  - Register: BAY1163877 / 17403
  - Principal investigator: Rodríguez-Vida Rodríguez, Alejo
- Ensayo mundial fase III, aleatorizado, abierto, multicéntrico de Durvalumab y el Bacilo de Calmette-Guerin (BCG) administrados como terapia combinada en comparación con BCG en monoterapia, en pacientes con cáncer de vejiga no músculo invasivo de alto riesgo sin tratamiento previo con BCG (POTOMAC).
  - Register: D419JC00001
  - Principal investigator: Cecchini Rosell, Lluís

- Estudio abierto de fase II con rucaparib en pacientes con carcinoma urotelial localmente avanzado o metastásico
  - Register: CO-338-085
  - Principal investigator: Rodríguez-Vida Rodríguez, Alejo
- Estudio de Fase IB multicéntrico, abierto, randomizado, de escalada de dosis para evaluar la seguridad, farmacocinética y actividad terapéutica de RO6874281 en combinación con atezolizumab ± bevacizumab en pacientes con carcinoma de células renales avanzado y/o metastásico no resecable
  - Register: BP39365
  - Principal investigator: Rodríguez-Vida Rodríguez, Alejo

Theses

- Font A. ERG rearrangements and PTEN loss in Prostate Cancer. Universitat Pompeu Fabra.
  - Directors: Lloreta Trull, Josep; Hernández-Llodrà, Sílvia
  - Date of defense: 15/01/2018



Localised Hyperthermia Therapies

Cancer RESEARCH GROUP

Group Leader
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Members

José Ignacio Poves Prim (Researcher)
Clara Pañella Vilamú (Researcher)

The primary objective of the group is scientific production and technological innovation in the field of the application of high-frequency current to generate heat in biological tissues, aimed at local cell destruction that is minimally invasive for tissue pathologies, especially (but not exclusively) of human neoplasms.

Main Publications

- Poves I, Burdío F, Morató O, Iglesias M, Radosevic A, Ilzarbe L, Visa L, Grande L. Comparison of Perioperative Outcomes Between Laparoscopic and Open Approach for Pancreatoduodenectomy: The PADULAP Randomized Controlled Trial. Ann Surg 2018; 268(5): 731-739. IF 9.203. D1.
- Molina-Montes E, Gómez-Rubio P, Márquez M, Rava M, Löhr M, Michalski CW, Molero X, Farré A, Perea J, Greenhalf W, et al. Risk of pancreatic cancer associated with family history of cancer and other medical conditions by accounting for smoking among relatives. Int J Epidemiol 2018; 47(2): 473-483. IF 8.36. D1.
- García-Tejedor A, Gumà A, Soler T, Valdivieso A, Petit A, Contreras N, Chappuis CG, Falo C, Pernas S, Amselem A, Plà MJ, Fernández-Montolí E, Burdío F, Ponce J. Radiofrequency Ablation Followed by Surgical Excision versus Lumpectomy for Early Stage Breast Cancer: A Randomized Phase II Clinical Trial. Radiology 2018; 289(2): 317-324. IF 7.469. D1.
- Castellví Q, Sánchez-Velázquez P, Moll X, Berjano E, Andaluz A, Burdío F, Bijnens B, Ivorra A. Modeling Liver Electrical Conductivity during Hypertonic Injection. Int J Numer Method Biomed Eng 2018; 34(1): e2904. IF 2.338. Q1.

Ongoing Research Projects

- Electroporación selectiva en hígado tumoral por medio de infusión de suero hipersalino vía portal
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI17/00468)
  - Period: from 2018 to 2020
  - Principal investigator: Burdío Pinilla, Fernando

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Grup de Recerca Terapias de Ablación en Cirugía Oncológica (2017-2020)
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 183)
  - Principal investigator: Burdío Pinilla, Fernando

Mechanisms of Tumorigenesis and Tumor Progression

Cancer

RESEARCH GROUP

Group Leader
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Members

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Víctor Manuel Díaz Cortés (Researcher)
Gemma Mancebo Moreno (Researcher)
Neus Martínez Moreno (Researcher)
Marina Bruch Oms (PhD Student)
David Cabrerizo Granados (PhD Student)
Héctor Franco Valls (PhD Student)
Guillem Lambies Barjau (PhD Student)
Aida Mestre Farrera (PhD Student)
Rubén Olivera Salguero (PhD Student)
Judit Vinaixa Forner (PhD Student)
Noemí Manero Rupérez (Technician)
Mireia Moreno Merino (Technician)
Raul Peña Arranz (Technician)
Jordi Vergés Sanjaime (Technician)
Silvia Geeraerd (Research assistant)

The group focuses on the study of the mechanisms controlling the acquisition of invasiveness by epithelial tumors as the first step in tumor metastasis. We are currently studying several aspects of this process. The main interest of the group concerns epithelial-to-mesenchymal transition (EMT), a conversion that provides tumor cells with greater invasive capacity, resistance to chemotherapeutic drugs, and cancer stem characteristics. In particular, we analyze the role of Snail1 transcriptional factor, required for EMT and also necessary for the activation of cancer-associated fibroblasts (CAFs). We are studying how Snail1 is post-translationally activated during EMT. Moreover,

using CAFs deprived of Snail1, we are assessing the effect of CAF activation on the growth, invasion and vascularization of epithelial tumors. We are also interested in the Snail1-dependent molecular pathways in fibroblasts involved in the activation of tumor cell invasion. In addition, we explore other molecular mechanisms underlying tumor progression, specifically the relevance of galectin-mediated tumor-stroma crosstalk. Moreover, given that cancer is a genetic disease caused by changes in gene expression during malignant transformation, we are also very interested in deciphering how these genetic changes are regulated by RNA translational control.

Main Publications

- Parras A, Anta H, Santos-Galindo M, Swarup V, Elorza A, Nieto-González JL, Picó S, Hernández IH, Díaz-Hernández JI, Belloc E, Rodolosse A, Parikshak NN, Peñagarikano O, Fernández-Chacón R, Irimia M, Navarro P, Geschwind DH, Méndez R, Lucas JJ. Autism-like phenotype and risk gene mRNA deadenylation by CPEB4 mis-splicing. Nature 2018; 560(7719): 441-446. IF 41.577. D1.
- Pascual-Reguant L, Blanco E, Galán S, Le Dily F, Cuartero Y, Serra-Bardenys G, Di Carlo V, Iturbide A, Cebrià-Costa JP, Nonell L, García de Herreros A, Di Croce L, Martí-Renom MA, Peiró S. Lamin B1 mapping reveals the existence of dynamic and functional euchromatin lamin B1 domains. Nat Commun 2018; 9(1): 3420. IF 12.353. D1.
- Mazzolini R, González N, García-Garijo A, Millanes-Romero A, Peiró S, Smith S, García de Herreros A, Canudas S. Snail1 transcription factor controls telomere transcription and integrity. Nucleic Acids Res 2018; 46(1): 146-158. IF 11.561. D1.
- Orozco CA, Martínez-Bosch N, Guerrero PE, Vinaixa J, Dalotto-Moreno T, Iglesias M, Moreno M, Djurec M, Poirier F, Gabius HJ, Fernández-Zapico ME, Hwang RF, Guerra C, Rabinovich GA, Navarro P. Targeting galectin-1 inhibits pancreatic cancer progression by modulating tumor-stroma crosstalk. Proc Natl Acad Sci U S A 2018; 115(16): E3769-E3778. IF 9.504. D1.
- Martínez-Bosch N, Vinaixa J, Navarro P. Immune Evasion in Pancreatic Cancer: From Mechanisms to Therapy. Cancers 2018; 10(1): 6. IF 5.326. Q1.
- Curto J, Del Valle B, Villarroel A, Fuertes G, Vinyoles M, Peña R, García de Herreros A, Duñach M. CK1ε and p120-catenin control Ror2 function in non-canonical Wnt signaling. Mol Oncol 2018; 12(5): 611-629. IF 5.264. Q1.
- Herrera A, Herrera M, Guerra-Pérez N, Galindo-Pumariño C, Larriba MJ, García-Barberán V, Gil B, Giménez-Moyano S, Ferreiro-Monteagudo R, Veguillas P, Candia A, Peña R, Pinto J, García-Bermejo ML, Muñoz A, García de Herreros A, Bonilla F, Carrato A, Peña C. Endothelial cell activation on 3D-matrices derived from PDGF-BB-stimulated fibroblasts is mediated by Snail1. Oncogenesis 2018; 7(9): 76. IF 4.722. Q1.

- Martínez-Bosch N; Barranco LE; Orozco CA; Moreno M; Visa L; Iglesias M; Oldfield L; Neoptolemos JP; Greenhalf W; Earl J; Carrato A; Costello E; Navarro P. Increased plasma levels of galectin-1 in pancreatic cancer: potential use as biomarker. Oncotarget. 9: 32984 - 32996. IF 4.67. Q1.
- Farfán N, Ocarez N, Castellón EA, Mejía N, García de Herreros A, Contreras HR. The transcriptional factor ZEB1 represses Syndecan 1 expression in prostate cancer. Sci Rep 2018; 8(1): 11467. IF 4.122. Q1.
- Goday A, Castañer O, Benaiges D, Busquets-Pou A, Ramon-Moros JM, Iglesias M, Barranco L, Flores JA. Can Helicobacter pylori Eradication Treatment Modify the Metabolic Response to Bariatric Surgery?. Obes Surg 2018; 28(8): 2386-2395. IF 3.895. D1.

Ongoing Research Projects

- Identificación de nuevos mecanismos de regulación de la hemostasia: control de la función plaquetaria a través de la proteína CPEB4
  - Financing institution: Fundación Española de Trombosis y Hemostasia (FETH)
  - Period: from 2018 to 2019.
  - Principal investigator: Navarro Medrano, Pilar
- Galectinas, control de la expresión génica y cáncer: de los mecanismos moleculares a la práctica clínica
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI17/00199)
  - Period: 2018
  - Principal investigator: Navarro Medrano, Pilar
- Entendiendo el papel de Snail1 en la metastasis: análisis de la acción de los fibroblastos activos
  - Financing institution: Ministerio de Economía y Competitividad (SAF2016-76461-R)
  - Period: from 2016 to 2019
  - Principal investigator: García de Herreros Madueño, Antonio
- Galectina-1: una nueva diana para el desarrollo de herramientas diagnósticas y terapéuticas para el cáncer de páncreas
  - Financing institution: Asociación Cáncer de Páncreas
  - Period: from 2016 to 2019
  - Principal investigator: Navarro Medrano, Pilar
- Caracterización de dianas funcionales e inhibidores de la actividad miofibroblástica para frenar la formación de metástasis
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI15/00447)
  - Period: from 2016 to 2018
  - Principal investigator: Baulida Estadella, Josep

- Implicaciones clínicas de la expresión de Galectina-1 en cáncer genitourinario: su papel en el diagnóstico, pronóstico, y en la predicción a la respuesta con inhibidores de los "check-point" inmunes
  - Financing institution: Asociación Española Contra el Cáncer Catalunya
  - Period: from 2016 to 2018
  - Principal investigator: Navarro Medrano, Pilar
- Nuevas funciones de Galectina-1 y CPEBs en cáncer: papel en la remodelación del estroma tumoral, invasión/metástasis y pluripotencialidad celular. Implicaciones clínicas
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI14/00125)
  - Period: from 2015 to 2019
  - Principal investigator: Navarro Medrano, Pilar

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Grup de Recerca en Transició Epiteli-Mesènquima i Invasió Tumoral. 2017 to 2020
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 24)
  - Principal investigator: García de Herreros Madueño, Antonio
- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Cellular and molecular mechanisms of disease. 2017 to 2020
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 225)
  - Principal investigator: Navarro Medrano, Pilar

Theses

- Sala-Romanyà L. Methyltransferase inhibitors interfere with Snail1 action on myofibroblast activity to prevent fibrosis and metastasis. Universitat Pompeu Fabra.
  - Director: Baulida Estadella, Josep
  - Date of defense: 20/06/2018
- Genovès J. Evolució de les lesions CIN-2 segons la P16 i el Ki-67. Universitat Autònoma de Barcelona.
  - Directors: Mancebo Moreno, Gemma; Carreras Collado, Ramon; Alameda Quitllet, Francesc
  - Date of defense: 08/11/2018

Molecular Cancer Therapeutics

Cancer

RESEARCH GROUP

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Irene Sangrador Escrig (Researcher)
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Arnau Zafra Ponce (Technician)
Lorena Tomás Marín (Research Assistant)

Our goal is to improve human cancer treatment through preclinical research with novel anticancer agents/combinations, and translational studies in clinical settings. The group includes three medical oncologists who lead competitive projects in breast (Joan Albanell), colon (Clara Montagut), and lung cancer (Edurne Arriola). We are organized in 2 areas: Preclinical laboratory (led by Ana Rovira) and Clinical research (led by Ignasi Tusquets). With regard to clinical research, we are working on bone health in breast cancer women (Sònia Servitja), Phase I trials (María Martínez) and oncogeriatry (Laura Visa, María Martínez). A Miquel Servet investigator (Alexandre Calon), who is formed in the role of stroma in cancer, has joined the group. Our integration in a single group has proven a successful strategy since it allows for sharing resources, expertise, knowledge and results, which improves the performance of the individual PIs far beyond the collaboration between independent groups.

The group is financed by CIBERONC and AGAUR.

Main Publications

- Tauriello DVF, Palomo-Ponce S, Stork D, Berenguer-Llergo A, Badia-Ramentol J, Iglesias M, Sevillano M, Ibiza S, Cañellas A, Hernando-Momblona X, Byrom D, Matarín JA, Calon A, Rivas EI, Nebreda AR, Riera A, Attolini CS, Batlle E. TGFβ drives immune evasion in genetically reconstituted colon cancer metastasis. Nature 2018; 554(7693): 538-543. IF 41.577. D1.
- Chakrabarti R, Celià-Terrassa T, Kumar S, Hang X, Wei Y, Choudhury A, Hwang J, Peng J, Nixon B, Grady JJ, DeCoste C, Gao J, van Es JH, Li MO, Aifantis I, Clevers H, Kang Y. Notch ligand Dll1 mediates cross-talk between mammary stem cells and the macrophageal niche. Science 2018; 360(6396): eaan4153. IF 41.058. D1.
- Pernas S, Martín M, Kaufman PA, Gil-Martín M, Gómez-Pardo P, López-Tarruella S, Manso L, Ciruelos E, Pérez-Fidalgo JA, Hernando C, Ademuyiwa FO, Weilbaecher K, Mayer I, Pluard TJ, Martínez-García M, Vahdat L, Pérez-García J, Wach A, Barker D, Fung S, Romagnoli B, Cortés J. Balixafortide plus eribulin in HER2-negative metastatic breast cancer: a phase 1, single-arm, dose-escalation trial. Lancet Oncol 2018; 19(6): 812-824. IF 36.418. D1.
- Gianni L, Mansutti M, Antón A, Calvo L, Bisagni G, Bermejo B, Semiglazov V, Thill M, Chacon JI, Chan A, Morales S, Álvarez I, Plazaola A, Zambetti M, Redfern AD, Dittrich C, Dent RA, Magazzù D, De Fato R, Valagussa P, Tusquets I. Comparing Neoadjuvant Nab-paclitaxel vs Paclitaxel Both Followed by Anthracycline Regimens in Women With ERBB2/HER2-Negative Breast Cancer-the Evaluating Treatment With Neoadjuvant Abraxane (ETNA) Trial: A Randomized Phase 3 Clinical Trial. JAMA Oncol 2018; 4(3): 302-308. IF 20.871. D1.
- Montagut C, Argilés G, Ciardiello F, Poulsen TT, Dienstmann R, Kragh M, Kopetz S, Lindsted T, Ding C, Vidal J, et al. Efficacy of Sym004 in Patients With Metastatic Colorectal Cancer With Acquired Resistance to Anti-EGFR Therapy and Molecularly

Selected by Circulating Tumor DNA Analyses: A Phase 2 Randomized Clinical Trial. JAMA Oncol 2018; 4(4): e175245. IF 20.871. D1.

- Shan M, Carrillo J, Yeste A, Gutzeit C, Segura D, Walland AC, Pybus M, Grasset EK, Yeiser JR, Matthews DB, van de Veen W, Comerma L, He B, Boonpiyathad T, Lee H, Blanco J, Osborne LC, Siracusa MC, Akdis M, Artis D, Mehandru S, Sampson HA, Berin MC, Chen K, Cerutti A. Secreted IgD Amplifies Humoral T Helper 2 Cell Responses by Binding Basophils via Galectin-9 and CD44. Immunity 2018; 49(4): 709-724.e8. IF 19.734. D1.
- Celià-Terrassa T, Kang Y. Metastatic niche functions and therapeutic opportunities. Nat Cell Biol 2018; 20: 868-877. IF 19.064. D1.
- Gawrzak S, Rinaldi L, Gregorio S, Arenas EJ, Salvador F, Urosevic J, Figueras-Puig C, Rojo F, del Barco I, Cejalvo JM, et al. MSK1 regulates luminal cell differentiation and metastatic dormancy in ER+ breast cancer. Nat Cell Biol 2018; 20(2): 211-221. IF 19.064. D1.
- Rius Ruiz I, Vicario R, Morancho B, Morales CB, Arenas EJ, Herter S, Freimoser-Grundschober A, Somandin J, Sam J, Ast O, et al. p95HER2-T cell bispecific antibody for breast cancer treatment. Sci Transl Med 2018; 10(461): eaat1445. IF 16.71. D1.
- Abad A, Martínez-Balibrea E, Viéitez JM, Orduña VA, García-Alfonso P, Manzano JL, Massutí B, Benavides M, Carrato A, Zanui M, Gallego J, Grávalos C, Conde V, Provencio M, Valladares M, Salazar R, Sastre J, Montagut C, Rivera F, Aranda E. Genotype-based selection of treatment for patients with advanced colorectal cancer (SETICC): a pharmacogenetic-based randomized phase II trial. Ann Oncol 2018; 29(2): 439-444. IF 13.926. D1.

Ongoing Research Projects

- Estroma tumoral y terapia personalizada en cáncer de mama y cáncer colorrectal
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI17/00211)
  - Period: from 2018 to 2020
  - Principal investigator: Calon, Alexandre
- Molecular characterization of the immunological traits of triple-negative breast cancer stem cells
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (CP17/00037)
  - Period: from 2018 to 2020
  - Principal investigator: Celià Terrassa, Antoni
- LCOR orchestrates the differential IFN-a response and immunological properties of triple-negative breast cancer stem cells
  - Financing institution: Cancer Research Institute (CRI) (55054)
  - Period: from 2018 to 2020
  - Principal investigator: Celià Terrassa, Antoni

- Comparación de eventos inmunológicos en pacientes con cáncer de pulmón de célula pequeña (CPCP) tratados con quimioterapia estándar vs quimioterapia más ipilimumab
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI16/00591)
  - Period: from 2017 to 2019
  - Principal investigator: Arriola Aperribay, Edurne
- Interaction between cancer cells and their microenvironment during metastatic dissemination
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (CP16/00151)
  - Period: from 2017 to 2019
  - Principal investigator: Calon, Alexandre
- Prevenció del càncer colorectal en la población de risc mitjà mitjançant biomarcadors genòmics i microbiòmics (CRIPREV)
  - Financing institution: Departament de Salut de la Generalitat de Catalunya (SLT002/16/00398)
  - Period: from 2017 to 2019
  - Principal investigator: Montagut Viladot, Clara
- Microenvironment contribution to response to chemotherapy in Colorectal Cancer
  - Financing institution: Asociación Española Contra el Cáncer Catalunya
  - Period: from 2017 to 2018
  - Principal investigator: Calon, Alexandre
- Resistencia a tratamiento anti-EGFR en cáncer colorrectal: dinámica clonal y estrategias terapéuticas
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI15/00457)
  - Period: from 2016 to 2020
  - Principal investigator: Montagut Viladot, Clara
- Uncovering resistance to monoclonal antibodies in colorectal and breast cancer
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PIE15/00008)
  - Period: from 2016 to 2019
  - Principal investigator: Albanell Mestres, Joan
- Papel de la heterogeneidad tumoral y la reprogramación dinámica de la célula tumoral en la resistencia a anticuerpos anti-HER2 en cáncer de mama HER2 positivo
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI15/00146)
  - Period: from 2016 to 2018
  - Principal investigator: Albanell Mestres, Joan

- Validación del impacto clínico de la monitorización de pacientes oncológicos mediante genotipado de DNA tumoral circulante en sangre (biopsia líquida)
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (DTS15/00048)
  - Period: from 2016 to 2018
  - Principal investigator: Montagut Viladot, Clara
- Potenciación de la citotoxicidad dependiente de anticuerpo mediada por linfocitos NK para inmunoterapia del cáncer
  - Financing institution: Asociación Española Contra el Cáncer-AECC (GCB15152947MELE)
  - Period: from 2015 to 2020
  - Principal investigator: Albanell Mestres, Joan
- Ultra-selection and molecular monitoring of colorectal cancer patients treated with anti-EGFR therapy using NGS platforms and serial liquid biopsies
  - Financing institution: Merck Serono International SA
  - Period: from 2015 to 2018
  - Principal investigator: Montagut Viladot, Clara

Participation in Research Networks

- CIBER Cáncer
  - Fondo de Investigación Sanitaria. ISCIII. CB16/12/00241
  - Principal investigator: Albanell Mestres, Joan

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Grup de Recerca en Terapèutica Molecular del Càncer. 2017-2020
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 507)
  - Principal investigator: Albanell Mestres, Joan

Clinical Trials Signed in 2018

- Estudio en fase III, internacional, multicéntrico, abierto, aleatorizado, de sacituzumab govitecan (IMMU-132) frente al tratamiento elegido por el médico en pacientes con cáncer de mama triple negativo metastásico que recibieron al menos dos tratamientos previos
  - Register: IMMU-132-05
  - Principal investigator: Martínez García, María

- Estudio de fase II multicéntrico, abierto para evaluar la actividad terapéutica de RO6874281, una inmunocitoquina compuesta por una variante de interleuquina 2 (IL-2V) dirigida contra la proteína de activación de fibroblastos (FAP), en combinación con atezolizumab (Anti-PD-L1), administrados por vía intravenosa, en pacientes con tumores sólidos avanzados y/o metastásicos
  - Register: BP40234
  - Principal investigator: Taus García, Álvaro
- Estudio observacional retrospectivo del tratamiento con nab-paclitaxel en pacientes con cáncer de mama metastásico HER2-negativo en condiciones de práctica clínica habitual. Estudio CAREMA
  - Register: FIB-PAC-2017-01
  - Principal investigator: Martos Cárdenas, Tamara
- Ensayo clínico fase II abierto de enzalutamida en cáncer de la granulosa ovárica avanzado no resecable o metastásico. Estudio GreKo III
  - Register: GETHI 2016-01
  - Principal investigators: Hernández González, Ainhoa; Taus García, Álvaro
- Estudio en fase III, aleatorizado, con doble enmascaramiento y controlado con placebo, de Nivolumab o Nivolumab con cisplatino, en combinación con radioterapia en participantes con Carcinoma de Células Escamosas de Cabeza y Cuello (CCECC) localmente avanzado elegibles o no para recibir tratamiento con cisplatino
  - Register: CA209-9TM
  - Principal investigator: Guix Arnau, Marta
- Identificación de mecanismos de resistencia a Kadcyla (trastuzumab emtansina; T-DM1) en pacientes con cáncer de mama avanzado HER2 positivo: un estudio prospectivo de GEICAM. (Estudio KATIA)
  - Register: GEICAM/2017-04
  - Principal investigator: Albanell Mestres, Joan
- Estudio de fase II con diseño de Simon de dos etapas para pacientes con cáncer de mama metastásico, BRCA negativo y con deficiencia en la recombinación homóloga, tratadas con olaparib en monoterapia (Estudio NOBROLA)
  - Register: MedOPP100
  - Principal investigator: Servitja Tormo, Sònia
- Single Arm, Open Label Phase 1b/2 Study of SGN-LIV1A in Combination with Pembrolizumab for First-Line Treatment of Patients with Unresectable Locally-Advanced or Metastatic Triple-Negative Breast Cancer
  - Register: SGNLVA-002
  - Principal investigator: Albanell Mestres, Joan

- Estudio en Fase III multicéntrico, abierto, randomizado, con dos brazos de tratamiento para evaluar la farmacocinética, la eficacia y la seguridad de la administración subcutánea de la combinación en dosis fijas de pertuzumab y trastuzumab en combinación con quimioterapia en pacientes con cáncer de mama precoz HER2 positivo
  - Register: WO40324
  - Principal investigator: Martínez García, María
- Estudio de fase III, aleatorizado, secuencial y abierto, para evaluar la eficacia de FOLFOX + panitumumab seguido por FOLFIRI + bevacizumab (Secuencia 1) frente a FOLFOX + bevacizumab seguido por FOLFIRI + panitumumab (Secuencia 2) en pacientes con cáncer colorrectal metastásico no resecable, RAS nativo, tumor primario en lado izquierdo, no tratado previamente: CR-SEQUENCE
  - Register: TTD-18-01
  - Principal investigator: Guix Arnau, Marta
- A Randomized, Open-Label, Phase 3 Study of Abemaciclib combined with Standard Adjuvant Endocrine Therapy versus Standard Endocrine Therapy Alone in Patients with High Risk, Node Positive, Early Stage, Hormone Receptor Positive, Human Epidermal Receptor 2 Negative, Breast Cancer
  - Register: I3Y-MC-JPCF
  - Principal investigator: Servitja Tormo, Sònia
- Phase Ib clinical trial, multicenter study to evaluate the combination of THC-CBD with Temozolomide and radiotherapy in patients with newly diagnosed glioblastoma
  - Register: GEINO 1601
  - Principal investigator: Martínez García, María
- A Phase III, randomized, double-blind, placebo-controlled, multicenter, international study of osimertinib as maintenance therapy in patients with locally advanced , unresectable EGFR mutation-positive Non-Small Cell Lung Cancer (Stage III) whose disease has not progressed following definitive platinum-based chemoradiation therapy (LAURA)
  - Register: D5160C00048
  - Principal investigator: Arriola Aperribay, Edurne
- Análisis retrospectivo, observacional del tratamiento con palbociclib en pacientes con cáncer de mama avanzado dentro del programa de uso compasivo
  - Register: PALBOCOMP
  - Principal investigator: Servitja Tormo, Sònia

- Estudio de Fase IA/IB, abierto, multicéntrico, de escalada de dosis, para evaluar la seguridad, la farmacocinética y la actividad antitumoral preliminar de RO7122290, un ligando 4-1BB (CD137L) dirigido contra la proteína α de activación de fibroblastos (FAP), con o sin pretratamiento con obinutuzumab, en pacientes con tumores sólidos avanzados y/o metastásicos, en monoterapia o en combinación con atezolizumab, seguido de cohorte(s) de expansión específica(s) del tumor
  - Register: BP40087
  - Principal investigator: Martínez García, María
- A Phase 2, Randomized, Open-Label, Multicenter, Three-Arm Trial of Sym004 versus each of its Component Monoclonal Antibodies, Futuximab and Modotuximab, in Patients with Chemotherapy-Refractory Metastatic Colorectal Carcinoma and Acquired Resistance to Anti-EGFR Monoclonal Antibody Therapy
  - Register: Sym004-13
  - Principal investigator: Guix Arnau, Marta
- A Phase 1b/2 Study of BMS-813160 in Combination with Chemotherapy or Nivolumab in Patients with Advanced Solid Tumors
  - Register: CV202-103
  - Principal investigator: Guix Arnau, Marta

Theses

- Sampera A. Characterization of molecular mechanisms of acquired resistance to trastuzumab in gastric cancer. Universitat Pompeu Fabra
  - Directors: Montagut, Clara; Sánchez-Martín, Francisco Javier
  - Date of defense: 20/11/2018

Molecular Mechanisms of Cancer and Stemness

Cancer

RESEARCH GROUP

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Laura Solé Font (PhD Student)
Laura Marruecos Aylagas (Technician)
Leonie Schoch (Technician)

The Molecular Mechanisms of Cancer and Stemness group is fully dedicated to the identification of elements and pathways that regulate Stem Cell and Cancer Stem Cell homeostasis, with the final goal of discovering biomarkers and therapeutic targets for regenerative medicine and cancer.

The group has historically focused on studying the Notch and NF-κB pathways, which are principal actors of these processes. However, our research now aims to integrate these pathways in the context of other important signals for stem cell and cell transformation such as BRAF or ß-catenin.

Main Publications

- López-Arribillaga E, Rodilla V, Colomer C, Vert A, Shelton A, Cheng JH, Yan B, González-Pérez A, Junttila MR, Iglesias M, Torres F, Albanell J, Villanueva A, Bigas A, Siebel CW, Espinosa L. Manic Fringe deficiency imposes Jagged1 addiction to intestinal tumor cells. Nat Commun 2018; 9(1): 2992. IF 12.353. D1.
- Santos-Barriopedro I, Bosch-Presegué L, Marazuela-Duque A, de la Torre C, Colomer C, Vázquez BN, Fuhrmann T, Martínez-Pastor B, Lu W, Braun T, Bober E, Jenuwein T, Serrano L, Esteller M, Chen Z, Barceló-Batllori S, Mostoslavsky R, Espinosa L, Vaquero A. SIRT6-dependent cysteine monoubiquitination in the PRE-SET domain of Suv39h1 regulates the NF-kB pathway. Nat Commun 2018; 9(1): 101. IF 12.353. D1.
- Gallardo F, Bertran J, López-Arribillaga E, González J, Menéndez S, Sánchez I, Colomo L, Iglesias M, Garrido M, Santamaría-Babí LF, Torres F, Pujol RM, Bigas A, Espinosa L. Novel phosphorylated TAK1 species with functional impact on NF-κB and β-catenin signaling in human Cutaneous T-cell lymphoma. Leukemia 2018; 32(10): 2211-2223. IF 10.023. D1.
- Bigas A, Espinosa L. The multiple usages of Notch signaling in development, cell differentiation and cancer. Curr Opin Cell Biol 2018; 55: 1-7. IF 10.015. D1.
- Colomer C, Margalef P, González J, Vert A, Bigas A, Espinosa L. IKKα is required in the intestinal epithelial cells for tumour stemness. Br J Cancer 2018; 118(6): 839-846. IF 5.922. Q1.

Ongoing Research Projects

- Identificación de nuevos biomarcadores y dianas terapéuticas asociados a la actividad IKK
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI16/00437)
  - Period: from 2017 to 2019
  - Principal investigator: Espinosa Blay, Lluís

Poly (ADP-ribose) Polymerases

Cancer RESEARCH GROUP

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Lucía Moreno Lama (Technician)

The aim of this group is to investigate the immunomodulatory roles of PARP proteins by using in vivo mouse models, and to investigate the relevance of this immunomodulation in the context of the immune response to cancer.

Main Publications

- Redondo-Pachón D, Pérez-Sáez MJ, Mir M, Gimeno J, Llinás L, García C, Hernández JJ, Yélamos J, Pascual J, Crespo M. Impact of persistent and cleared preformed HLA DSA on kidney transplant outcomes. Hum Immunol. 2018 Jun;79(6):424-431. IF 1.994. Q2

Ongoing Research Projects

- Estudio de las funciones específicas de las proteínas PARP en el stress replicativo inducido por oncogenes y su relevancia en cáncer
  - Financing institution: Ministerio de Economía y Competitividad (SAF2017-83565-R)
  - Period: from 2018 to 2020
  - Principal investigator: Yélamos López, José
- Modulación de la respuesta inmune por las proteínas PARP en cáncer de mama
  - Financing institution: Fundación Associación Española Contra el Cáncer (PROYEI6018YÉLA)
  - Period: from 2017 to 2020
  - Principal investigator: Yélamos López, José

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Diferenciació i Fisiopatologia Limfocitària (2017-2020)
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 125)
  - Principal investigator: Yélamos López, José

Radiation Oncology

Cancer RESEARCH GROUP

Group Leader
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Anna Reig Castillejo (Researcher)
Núria Rodríguez de Dios (Researcher)
Javier Sanz Latiesas (Researcher)
M. Josefa Dengra Domingo (Technician)
Rafael Jiménez Lahuerta (Technician)

The Radiation Oncology Research Group (GREOR) is a clinical and basic research group working on the use of radiation as a base of cancer treatment, especially in the lines of altered fractionation, radiotoxicity and quality of life, technological quality control and innovation; in addition to clinical projects linked to the clinical activity in the Radiation Oncology Service.

It is a multidisciplinary group comprising medical staff, physicists, technicians and nursing staff. The group has a significant scientific output in relation to radiation oncology groups in the area, besides activity to give research visibility.

Its main objective is to maintain the active lines of research, establish synergies with other groups, both national and international, to continue with the group's training activities and the level of scientific output, and fundraising for both competitive and non-competitive funds, besides increasing its impact in society (popular science, clinical practice guidelines, patient groups and dissemination).

Main Publications

- Couñago F, Rodríguez de Dios N, Montemuiño S, Jové-Teixidó J, Martín M, Calvo-Crespo P, López-Mata M, Samper-Ots MP, López-Guerra JL, García-Cañibano T, et al. Neoadjuvant treatment followed by surgery versus definitive chemoradiation in stage IIIA-N2 non-small-cell lung cancer: A multi-institutional study by the oncologic group for the study of lung cancer (Spanish Radiation Oncology Society). Lung Canc 2018; 118: 119-127. IF 4.486. Q1.
- Rodríguez de Dios N, Couñago F, López JL, Calvo P, Murcia M, Rico M, Vallejo C, Luna J, Trueba I, Cigarral C, Farré N, Manero RM, Durán X, Samper P. Treatment Design and Rationale for a Randomized Trial of Prophylactic Cranial Irradiation With or Without Hippocampal Avoidance for SCLC: PREMER Trial on Behalf of the Oncologic Group for the Study of Lung Cancer/Spanish Radiation Oncology Group-Radiation Oncology Clinical Research Group. Clin Lung Cancer 2018; 19(5): e693-e697. IF 4.204. Q2.
- Maurel J, Sánchez-Cabús S, Laquente B, Gaba L, Visa L, Fabregat J, Poves I, Roselló S, Díaz-Beveridge R, Martín-Richard M, Rodríguez J, Sabater L, Conill C, Cambray M, Reig A, Ayuso JR, Valls C, Ferrández A, Bombí JA, Ginés A, García-Albéniz X, Fernández-Cruz L. Outcomes after neoadjuvant treatment with gemcitabine and erlotinib followed by gemcitabine-erlotinib and radiotherapy for resectable pancreatic cancer (GEMCAD 10-03 trial). Cancer Chemoth Pharm 2018; 82(6): 935-943. IF 2.808. Q2.
- Sanz J, Zhao M, Rodríguez de Dios N, Granado R, Foro P, Reig A, Membrive I, Algara M. Once-Weekly Hypofractionated Radiotherapy for Breast Cancer in Elderly Patients: Efficacy and Tolerance in 486 Patients. Biomed Res Int 2018; 2018: 8321871. IF 2.583. Q2.

Ongoing Research Projects

- Valoración de los beneficios de la rehabilitación profiláctica de la musculatura deglutoria sobre la calidad de vida y deglución, a corto y medio plazo, de los pacientes sometidos a radioterapia por cáncer de cabeza y cuello: Ensayo Clínico Aleatorizado
  - Financing institution: Fundación Asociación Española Contra el Cáncer (PS14152556FORO)
  - Period: from 2015 to 2019
  - Principal investigator: Foro Arnalot, Palmira

Clinical Trials Signed in 2018

- OPTimizing Irradiation through Molecular Assessment of Lymph Node after primary sistemic treatment (OPTIMAL IIa)
  - Register: GIC - RAD - 2016 - 01
  - Principal investigator: Algara López, Manuel Ignacio

Stem Cells and Cancer

Group Leader
Anna Bigas Salvans

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Members

Roshana Thambyrajah (Researcher)
David Arambilet Morilla (PhD Student)
Jessica González Miranda (Technician)
Arnau Iglesias Piqueras (Technician)
Cristina Ruiz Herguido (Technician)

Our research group studies the molecular mechanisms involved in the generation and maintenance of stem cells and their differentiation from functional cells. We particularly focus in studying signaling pathways and their activation effects that control the hematopoietic system. Our goal is to understand how these signals are important in the generation of hematopoietic stem cells during embryonic development, maintenance of these cells in adulthood and how these signals are perturbed in leukemic processes.

Main Publications

- Dzierzak E, Bigas A. Blood Development: Hematopoietic Stem Cell Dependence and Independence. Cell Stem Cell 2018; 22(5): 639-651. IF 23.29. D1.
- López-Arribillaga E, Rodilla V, Colomer C, Vert A, Shelton A, Cheng JH, Yan B, González-Pérez A, Junttila MR, Iglesias M, Torres F, Albanell J, Villanueva A, Bigas A, Siebel CW, Espinosa L. Manic Fringe deficiency imposes Jagged1 addiction to intestinal tumor cells. Nat Commun 2018; 9(1): 2992. IF 12.353. D1.
- Gallardo F, Bertran J, López-Arribillaga E, González J, Menéndez S, Sánchez I, Colomo L, Iglesias M, Garrido M, Santamaría-Babí LF, Torres F, Pujol RM, Bigas A, Espinosa L. Novel phosphorylated TAK1 species with functional impact on NF-κB and β-catenin signaling in human Cutaneous T-cell lymphoma. Leukemia 2018; 32(10): 2211-2223. IF 10.023. D1.
- Bigas A, Espinosa L. The multiple usages of Notch signaling in development, cell differentiation and cancer. Curr Opin Cell Biol 2018; 55: 1-7. IF 10.015. D1.
- Colomer C, Margalef P, González J, Vert A, Bigas A, Espinosa L. IKKα is required in the intestinal epithelial cells for tumour stemness. Br J Cancer 2018; 118(6): 839-846. IF 5.922. Q1.

Ongoing Research Projects

- Regeneració hematopoètica a partir de cèl·lules mare pluripotents.
  - Financing institution: Departament de Salut de la Generalitat de Catalunya (SLT002/16/00299)
  - Period: from 2017 to 2019
  - Principal investigator: Bigas Salvans, Anna
- Exploring Mechanisms of Resistance in Adult and Pediatric T-Acute Lymphoblastic Leukemia
  - Financing institution: Fundación Asociación Española Contra el Cáncer (GC16173697BIGA)
  - Period: from 2016 to 2021
  - Principal investigator: Bigas Salvans, Anna
- Especificación de célula madre hematopoyética y leucémica
  - Financing institution: Ministerio de Economía y Competitividad (SAF2016-75613-R)
  - Period: from 2016 to 2019
  - Principal investigator: Bigas Salvans, Anna

Participation in Research Networks

- CIBER Cancer
  - Fondo de Investigación Sanitaria. ISCIII (CB16/12/00244)
  - Period: from 2017 to 2019
  - Principal investigator: Bigas Salvans, Anna
- Network Metabocancer
  - Ministerio de Ciencia, Innovación y Universidades, RED2018-102379-T9
  - Period: from 2018 to 2019
  - Investigator: Bigas Salvans, Anna

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Grup de Recerca en Cèl·lules Mare i Càncer. 2017 to 2020
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 135)
  - Principal investigator: Bigas Salvans, Anna

Translational Research on Hematological Neoplasms

Group Leader
Blanca Espinet Solà

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Members

Leonor Arenillas Rocha (Researcher)
Luis Carlos Barranco Sanz (Researcher)
Gonzalo Blanco Ares (Researcher)
Xavier Calvo González (Researcher)
Lluís Colomo Saperas (Researcher)
Ana Ferrer del Álamo (Researcher)
Fernando Gallardo Hernández (Researcher)
Carme Pedro Olivé (Researcher)
Anna Maria Puiggros Metje (Researcher)
Marta Salido Galeote (Researcher)
Sílvia Ramos Campoy (PhD Student)
Sergi Clavé Safon (Technician)
Beatriz Costán Medina (Technician)
M. Carme Melero Vilella (Technician)
Maria del Mar Rodríguez Rivera (Technician)

The Translational Research on Hematological Neoplasms Group (GRETNHE) is integrated within the Cancer Programme from the Hospital del Mar Medical Research Institute (IMIM). The GRETNHE is a multidisciplinary group with different research areas. Among them, the most relevant are myelodysplastic syndromes (MDS), myeloproliferative neoplasms/myelodysplastic syndromes (MPN/MDS), chronic lymphocytic leukemia/monoclonal B cell lymphocytosis (CLL/MBL), mantle cell lymphoma/monoclonal asymptomatic lymphocytosis cyclin D1 positive (MCL/MALD1), splenic marginal zone lymphoma (SMZL) and cutaneous lymphomas (CL). Our aim is the phenotypic, cytogenetic and molecular characterization of these entities.

Main Publications

- Clot G, Jares P, Giné E, Navarro A, Royo C, Pinyol M, Martín-Garcia D, Demajo S, Espinet B, Salar A, Ferrer A, Muntañola A, Aymerich M, Rauert-Wunderlich H, Jaffe ES, Connors JM, Gascoyne RD, Delabie J, López-Guillermo A, Ott G, Wright GW, Staudt LM, Rosenwald A, Scott DW, Rimsza LM, Beà S, Campo E. A new molecular assay and genomic complexity predict outcome in conventional and leukemic non-nodal mantle cell lymphoma. Blood 2018; 132(4): 413-422. IF 15.132. D1.
- Calvo X, Florensa L, Arenillas L. (In)convenience of adding age and comorbidities to prognostic models in myelodysplastic syndromes. Leukemia 2018; 32(5): 1264-1266. IF 10.023. D1.
- Gallardo F, Bertran J, López-Arribillaga E, González J, Menéndez S, Sánchez I, Colomo L, Iglesias M, Garrido M, Santamaría-Babí LF, Torres F, Pujol RM, Bigas A, Espinosa L. Novel phosphorylated TAK1 species with functional impact on NF-κB and β-catenin signaling in human Cutaneous T-cell lymphoma. Leukemia 2018; 32(10): 2211-2223. IF 10.023. D1.
- Karube K, Enjuanes A, Dlouhy I, Jares P, Martín-Garcia D, Nadeu F, Ordóñez GR, Rovira J, Clot G, Royo C, et al. Integrating genomic alterations in diffuse large B-cell lymphoma identifies new relevant pathways and potential therapeutic targets. Leukemia 2018; 32(3): 675-684. IF 10.023. D1.
- Cabello I, Alia P, Pintó X, Muniesa C, Fernández-de-Misa R, Peñate Y, Morillo M, Pérez-Farriols A, Estrach T, Izu R, Gallardo F, Román C, Cervigón I, Ortiz-Brugués A, Ortiz-Romero PL, Servitje O. Association of APOA5 and APOC3 Genetic Polymorphisms With Severity of Hypertriglyceridemia in Patients With Cutaneous T-Cell Lymphoma Treated With Bexarotene. JAMA Dermatol 2018; 154(12): 1424-1431. IF 8.107. D1.
- López-Lerma I, Peñate Y, Gallardo F, Martí RM, Mitxelena J, Bielsa I, Velasco-Tamariz V, Yanguas-Bayona JI, Sánchez-Sambucety P, García-Patos V, Ortiz-Romero PL, Pujol RM, Estrach T. Subcutaneous panniculitis-like T-cell lymphoma: Clinical features, therapeutic approach, and outcome in a case series of 16 patients. J Am Acad Dermatol 2018; 79(5): 892-898. IF 6.898. D1.
- Chang LW, Patrone CC, Yang W, Rabionet R, Gallardo F, Espinet B, Sharma MK, Girardi M, Tensen CP, Vermeer M, Geskin LJ. An integrated data resource for genomic analysis of cutaneous T-cell lymphoma. J Invest Dermatol 2018; 138(12): 2681-2683. IF 6.448. D1.
- Maroñas-Jiménez L, Estrach T, Gallardo F, Pérez A, Andrés H, Servitje O, Pérez-Gala S, Linares M, Jiménez-Gallo D, Sanz-Bueno DJ, Lora D, Monsálvez V, Ortiz-Romero PL. Aprepitant improves refractory pruritus in primary cutaneous T-cell lymphomas: experience of the Spanish Working Group on Cutaneous Lymphomas. Br J Dermatol 2018; 178(4): e274. IF 6.129. D1.

- Blanco G, Vardi A, Puiggros A, Gómez-Llonin A, Muro M, Rodríguez-Rivera M, Stalika E, Abella E, Gimeno E, López-Sánchez M, Senín A, Calvo X, Abrisqueta P, Bosch F, Ferrer A, Stamatopoulos K, Espinet B. Restricted T cell receptor repertoire in CLL-like monoclonal B cell lymphocytosis and early stage CLL. OncoImmunology 2018; 7(6): e1432328. IF 5.503. Q1.
- Clavé S, Pijuan L, Casadevall D, Taus A, Gimeno J, Hernández-Llodrà S, Rodríguez M, Lorenzo M, Menéndez S, Albanell J, Espinet B, Arriola E, Salido M. CD274 (PDL1) and JAK2 genomic amplifications in pulmonary squamous-cell and adenocarcinoma patients. Histopathology 2018; 72(2): 259-269. IF 3.267. Q1.

Ongoing Research Projects

- Desarrollo y validación de un panel de secuenciación para translocaciones y mutaciones con relevancia clínica en neoplasias de células B maduras
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI15/00437)
  - Period: from 2016 to 2020
  - Principal investigator: Espinet Solà, Blanca
- Leucemia linfática crónica de alto riesgo genético: caracterización citogenético-molecular y epigenética por microarrays y Next Generation Sequencing. Asociación con impacto clínico
  - Financing institution: Fundación Española de - Hematología y Hemoterapia (FEHH)
  - Period: from 2018 to 2019
  - Principal investigator: Blanco Ares, Gonzalo
- Análisis clínico de la monitorización mediante genotipado de ADN tumoral circulante en sangre (biopsia líquida) en pacientes con neoplasias linfoides de alto grado
  - Financing institution: Fondo de Investigación Sanitaria. ISCIII (PI17/00313)
  - Period: from 2018 to 2020
  - Principal investigator: Colomo Saperas, Lluís
- Clinico-biological characterization of chronic lymphocytic leukemia (CLL) patients with complex karyotype (CK) and absence of TP53 aberrations
  - Financing institution: GILEAD SCIENCES S.L.U
  - Period: from 2018 to 2019
  - Principal investigator: Espinet Solà, Blanca

Group's Recognitions

- Officially recognised as a consolidated research group by the Generalitat de Catalunya: Grup de Recerca Translacional en Neoplàsies Hematològiques (GRETNHE). 2017-2020
  - Agència de Gestió d'Ajuts Universitaris i de Recerca (SGR 437)
  - Principal investigator: Espinet Solà, Blanca

Clinical Trials Signed in 2018

- Estudio en fase III, aleatorizado, doble ciego y controlado con placebo para investigar la eficacia y seguridad de roxadustat (FG-4592) en el tratamiento de la anemia en pacientes con riesgo inferior de síndrome mielodisplásico (SMD) y carga baja de transfusión (LTB) de eritrocitos
  - Register: FGCL-4592-082
  - Principal investigator: Pedro Olivé, Carme
- Estudio aleatorizado (1:1), doble ciego, multicéntrico y controlado con placebo para evaluar la quimioterapia intensiva con o sin GLASDEGIB (PF-04449913) o la azacitidina (AZA) con o sin GLASDEGIB en pacientes con leucemia mieloide aguda no tratada previamente
  - Register: B1371019
  - Principal investigator: Pedro Olivé, Carme