COMPETITIVE FUNDING

The CNIO attracts a substantial proportion of its funding from external sources. Most of this funding comes from national and international funding bodies and it is used to finance not only the outstanding R&D activities of the Centre, but also strategic actions in Innovation together with Industry partners, as well as other relevant activities related to dissemination and scientific outreach, which are aimed to promote public awareness. In 2020, researchers at the CNIO were involved in 142 projects that received extramural funding.

CNIO is actively participating in 56 collaborative projects in total: 14 are international collaborative projects (3 of which are coordinated by the CNIO), and 42 are collaborative projects conducted at the national level (16 of them coordinated by the CNIO). The international collaborative projects are funded by institutions such as the European Commission through the 7th Framework Programme and Horizon 2020, the US National Institutes of Health (NIH), the US Department of Defense (DoD), the International Human Frontier Science Program Organization, the Melanoma Research Alliance, the Paraffadence Foundation, the Worldwide Cancer Research, the Lustgarten Foundation - Stand-up 2 Cancer Initiative. At the national level, collaborative projects have received important public grants of the Strategic Research Action, managed by the Institute of Health Carlos III (ISCIII) and the State Research Agency, Spanish Ministry of Science and Innovation (AEI/MCI), and the R&D Activities Programmes of the Community of Madrid, most of them co-funded by European Structural and Investment Funds (European Regional Development Fund and European Social Fund). Private funders and charities have also recognised the excellence of our scientific projects, such as the Scientific Foundation of the Spanish Association Against Cancer (Fundación Científica AECC), the Ramón Areces Foundation, La Marató de TV3 Foundation, or “la Caixa” Banking Foundation.

In addition to these collaborative projects, researchers at the CNIO have attracted funding for projects carried out by individual groups. In 2020, 19 of these projects received international funds, while 67 of them received national funding (mainly from the AEI/MCI and the ISCIII and private foundations). The international individual projects are funded by the European Commission (8 European Research Council [ERC], grants and 5 Marie Skłodowska-Curie Actions), the Worldwide Cancer Research, the Cancer Research Institute, the Prostate Cancer Foundation, the US DoD, the Prostate Cancer Foundation, the European Foundation for the Study of Diabetes, the American Thyroid Association, and the Melanoma Research Alliance.

INTERNATIONAL GRANTS

EUROPEAN COMMISSION

HORIZON 2020 (2014-2020)

SOCIAL CHALLENGE 1: HEALTH, DEMOGRAPHIC CHANGE AND WELLBEING

PRINCIPAL INVESTIGATOR | PROJECT TITLE
---|---
Benítez, Javier (until July 2020), González-Neira, Anna | BRIDGES: Breast cancer risk after diagnostic gene sequencing (Ref.: 634935)

FET OPEN – NOVEL IDEAS FOR RADICALLY NEW TECHNOLOGIES

PRINCIPAL INVESTIGATOR | PROJECT TITLE
---|---
Valiente, Manuel | NanoBRIGHT: Bringing nanophotonics into the brain (Ref.: 828972)

INTEGRATING AND OPENING RESEARCH INFRASTRUCTURES OF EUROPEAN INTEREST

PRINCIPAL INVESTIGATOR | PROJECT TITLE
---|---
Muñoz, Javier | EPIC-XS: European Proteomics Infrastructure Consortium providing Access (Ref.: 823839)

MARIE SKŁODOWSKA-CURIE ACTIONS (MSCA)

PRINCIPAL INVESTIGATOR | PROJECT TITLE
---|---
Barbacid, Mariano | ERA PerMed: Personalized multimodal therapies for the treatment of lung cancer (ISCIII Ref.: ACO/01014, FC AECC Ref.: PERMED2017/1108)

US NATIONAL INSTITUTES OF HEALTH (NIH)

NIH National Institutes of Health

PRINCIPAL INVESTIGATOR | PROJECT TITLE
---|---
Muñoz, Inés | Targeting Mdm2-MdmX E3 (Ref.: R01CA208352)

**INTERNATIONAL GRANTS**

**INDIVIDUAL PROJECTS**

**EUROPEAN COMMISSION**

**7TH FRAMEWORK PROGRAMME (2007-2013)**

**EUROPEAN RESEARCH COUNCIL (ERC)**

**PRINCIPAL INVESTIGATOR**

**PROJECT TITLE**

Fernández-Capetillo, Óscar

ERC Consolidator Grant RESEARCH: Investigating the causes and consequences of replication stress in mammalian health (Ref.: 617840)

**EUROPEAN RESEARCH COUNCIL (ERC)**

**PRINCIPAL INVESTIGATOR**

**PROJECT TITLE**

Barbacid, Mariano

ERC Advanced Grant THERACAN: Novel therapeutic strategies to treat pancreatic and lung cancer (Ref.: 695566)

Blasco, María

ERC Advanced Grant SHELTERINS: Targeting Shelterin Proteins in Cancer (Ref.: 882385)

Cortés, Felipe

ERC Consolidator Grant TOPomics: Global dynamics of topoisomerase-induced DNA breaks (Ref.: 647359)

Efeyan, Alejo

ERC Starting Grant NutrientSensingVivo: The Physiology of Nutrient Sensing by mTOR (Ref.: 638891)

González, Eva

ERC Consolidator Grant PLEIO-RANK: Pleiotropic treatment of cancer: RANK inhibitors targeting cancer stem cells and immunity (Ref.: 682095)

Soengas, María S.

ERC Advanced Grant METALERT-STOP: Imaging, characterizing and targeting metastatic niches in melanoma (Ref.: 884699)

Valiente, Manuel

ERC Consolidator Grant ALTER-Brain: Metastasis-associated altered molecular patterns in the brain (Ref.: 864759)

**EUROPEAN RESEARCH COUNCIL (ERC)**

**PRINCIPAL INVESTIGATOR**

**PROJECT TITLE**

Olmos, David

Clinical qualification of DNA repair defects as prognostic and predictive biomarker in metastatic prostate cancer using genomics and tissue-based functional assays (Ref.: W81XWH-18-1-0770)

Al-Shahrour, Fátima

Integration of multi-omics profiling and immune contexture in metastatic PDGFL patients

Valiente, Manuel (Coordinator)

S100A9-dependent radiation resistance in brain metastasis (Ref.: 19-0177)

Llorca, Óscar (Coordinator)

Photochemical trap and high-resolution imaging of transient chromatin complexes from living cells (Ref.: RGFO33/207)

Malats, Núria

Pancreatic Cancer Collective - Computational Approaches To Identifying High-Risk Pancreatic Cancer Populations: High-Risk Cohorts Through Molecular and Genetic Data (Ref.: 864759)

Soengas, María S. (Coordinator)

Heterogeneity in melanoma metastasis and resistance to immune checkpoint blockade

Soengas, María S.

METHEL: Long-range-acting drivers of premetastatic niches in melanoma (Ref.: 753442)

Real, Francisco X.

PD4D-2017: Super-enhancer modules controlling plasticity and response to therapy in pancreatic cancer (Ref.: 895343)

Efeyan, Alejo

METLINC: Identification of links between cancer cell growth and metabolism genes (Ref.: 794077)

Valiente, Manuel

Blocking melanoma brain metastasis by targeting the environment (Ref.: 488113)

**HORIZON 2020 (2014-2020)**

**EUROPEAN RESEARCH COUNCIL (ERC)**

**PRINCIPAL INVESTIGATOR**

**PROJECT TITLE**

Barbadillo, Mariano

ERC Advanced Grant THERACAN: Novel therapeutic strategies to treat pancreatic and lung cancer (Ref.: 695566)

Blasco, María

ERC Advanced Grant SHELTERINS: Targeting Shelterin Proteins in Cancer (Ref.: 882385)

Cortés, Felipe

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ERC Consolidator Grant PLEIO-RANK: Pleiotropic treatment of cancer: RANK inhibitors targeting cancer stem cells and immunity (Ref.: 682095)

Soengas, María S.

ERC Advanced Grant METALERT-STOP: Imaging, characterizing and targeting metastatic niches in melanoma (Ref.: 884699)

Valiente, Manuel

ERC Consolidator Grant ALTER-Brain: Metastasis-associated altered molecular patterns in the brain (Ref.: 864759)

**WORLDWIDE CANCER RESEARCH (WCR; FORMERLY AICR)**

**PRINCIPAL INVESTIGATOR**

**PROJECT TITLE**

Olmos, David

Clinical qualification of DNA repair defects as prognostic and predictive biomarker in metastatic prostate cancer using genomics and tissue-based functional assays (Ref.: W81XWH-18-1-0770)

**WORLDWIDE CANCER RESEARCH (WCR; FORMERLY AICR)**

**PRINCIPAL INVESTIGATOR**

**PROJECT TITLE**

Olmos, David

Clinical qualification of DNA repair defects as prognostic and predictive biomarker in metastatic prostate cancer using genomics and tissue-based functional assays (Ref.: W81XWH-18-1-0770)
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Scientific Management | Competitive Funding

Prostate Cancer Foundation

Principal Investigator | Project Title
--- | ---
Castro, Elena | Prospective study of lethal prostate cancer clinical and genomic evolution in DNA repair deficient tumors

Worldwide Cancer Research (WCR; formerly AICR)

Principal Investigator | Project Title
--- | ---
Malumbres, Marcos | Exploring the use of CDK4/6 inhibitors in combination with classical chemotherapy (Ref: 20-0155)

US Congressionally Directed Medical Research Programs (COMMPR)/US Department of Defense

Principal Investigator | Project Title
--- | ---
Peñalva, Héctor | Role of exosomes and Endoglin in Neurofibromatosis Progression (Ref: W81XWH-16-1-0131)

Cancer Research Institute

Principal Investigator | Project Title
--- | ---
Valiente, Manuel | Brain-specific strategies to improve responses to immunotherapy (Ref: 54545)

Beug Foundation for Metastasis Research

Principal Investigator | Project Title
--- | ---
Valiente, Manuel | Altered brain vessels as a novel target in brain metastasis

European Foundation for the Study of Diabetes/Juvenile Diabetes Research Foundation/Lilly

Principal Investigator | Project Title
--- | ---
Djoudi, Nabil | Elucidating mechanisms of epigenetic changes in type 1 diabetes and treatment with DNA demethylating drugs

American Thyroid Association (ATA), Co-funded by Bite Me Cancer (BMC)

Principal Investigator | Project Title
--- | ---
Mortero, Cristina | Discovering novel molecular nodes involved in MTC development and evolution (Ref: GRANT2020-0000000150)

NATIONAL GRANTS

Collaborative Projects

Institute of Health Carlos III / Instituto de Salud Carlos III (ISCIII) Strategic Health Action / Acción Estratégica en Salud (AES)

Principal Investigator | Project Title
--- | ---
Al-Shahrour, Fátima | Plataforma de Bioinformática. Instituto Nacional de Bioinformática (Group Ref: PT17/0009/0011)

Artiga, Mª Jesús; Ortega, Eva | Plataforma de Biobancos (Group Ref: PT17/0015/0004)

Barrón, Javier (until July 2020); González-Neira, Anna | Plataforma de proteómica, genotipado y líneas celulares. Plataforma de recursos biomoleculares, PRB (Group Ref: PT17/0019/0020)

Muñoz, Javier | Plataforma de proteómica, genotipado y líneas celulares. Plataforma de recursos biomoleculares, PRB (Group Ref: PT17/0019/0005)

Sub-Programme of Grants for Research Support Platforms in Health Sciences and Technology / Subprograma de Ayudas para Plataformas de Apoyo a la Investigación en Ciencias y Tecnologías de la Salud

Principal Investigator | Project Title
--- | ---
Al-Shahrour, Fátima | Plataforma de Bioinformática. Instituto Nacional de Bioinformática (Group Ref: PT17/0009/0011)

Artiga, Mª Jesús; Ortega, Eva | Plataforma de Biobancos (Group Ref: PT17/0015/0004)

Barrón, Javier (until July 2020); González-Neira, Anna | Plataforma de proteómica, genotipado y líneas celulares. Plataforma de recursos biomoleculares, PRB (Group Ref: PT17/0019/0020)

Muñoz, Javier | Plataforma de proteómica, genotipado y líneas celulares. Plataforma de recursos biomoleculares, PRB (Group Ref: PT17/0019/0005)

Research Projects in Health / Proyectos de Investigación en Salud

Principal Investigator | Project Title
--- | ---
Artiga, Mª Jesús (Coordinator) | OPTIMARK project: Optimization of tissue samples for the development and validation of disease biomarkers (Ref: PI16/00946)

García-Pérez, María José (Coordinator) | Global Instability and Mutation Burden genetic signatures in Clear Cell and Endometrioid Ovarian Carcinomas: Immunogenicity and prognostic and predictive relevance (Ref: PI19/01730)

González-Neira, Anna (Coordinator) | Role of the mitochondrial genes in cardiotoxicity: identification of predictive biomarkers (Ref: PI18/01242)

Malats, Núria (Coordinator) | Building and validation of risk prediction models for pancreatic cancer. The application of a multi-omics approach (Ref: PI18/01057)

Malats, Núria (Coordinator) | Study of the environmental and genetic risk profiles and clinical behaviour of the basal-like phenotype of pancreatic cancer. Comparison with bladder, breast and endometrial cancers (Ref: PI18/01057)

Olmeda, David (Coordinator) | Visualization and molecular characterization of new biomarkers of resistance to immunotherapy (Ref: PI18/01057)

Osorio, Ana (Coordinator) | Optimising massive sequencing strategies for the identification and clinical translation of new susceptibility genes implicated in familial breast cancer (Ref: PI19/00646)

1, 2 This Programme is cofunded by the European Regional Development Fund (ERDF)
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FACTS & FIGURES

SCIENTIFIC MANAGEMENT

COMMUNITY OF MADRID / COMUNIDAD AUTÓNOMA DE MADRID

R&D ACTIVITIES PROGRAMME IN BIOMEDICINE:

PRINCIPAL INVESTIGATOR PROJECT TITLE

Al-Shahrour, Fátima; Roncador, Giovanna Programa LINFOMAS-CM: Linfomas agresivos, análisis olfativo y genómico integrados para una medicina de precisión (Ref.: B2017/BMD-3778)

Blasco, María Programa RypSE-CN: RNA y proteínas de unión a RNA, implicaciones en salud y enfermedad (Ref.: B2017/BMD-3770)

Djouder, Nabil Programa Tumolvifer-CN: Estudio de la mutación del hepatocito desde un enfoque multidisciplinar (Ref.: B2017/BMD3817)

Malumbres Marcos (Coordinator); Barbacid, Mariano Programa iLUNG-CN: Terapias personalizadas y nanotecnología en cáncer de pulmón (Ref.: B2017/BMD-3884)

Mulero, Francisca Programa RENIM-CN: Red Madrileña de Nanomedicina en Inmagen Molecular (Ref.: B2017/BMD-3867)

Quintela, Miguel Ángel Programa IMMUNOTHERCAN-CN: Inmunidad tumoral e inmunoterapia del cáncer (Ref.: B2017/BMD-3733)

Robledo, Mercedes Programa TIRONET-CN: Fisiopatología Tiroidea. Mecanismos impuestos en cáncer, autoinmunidad y acción de las hormonas tiroideas (Ref.: B2017/BMD-3724)

Soengas, María S. Programa NANODENDMEDII-CN: Nanosistemas dendríticos como agentes y vectores terapéuticos en distintas aplicaciones biológicas (II) (Ref.: B2017/BMD-3703)

SARS-COV-2 AND COVID-19 RELATED ILLNESS RESEARCH PROJECTS

PRINCIPAL INVESTIGATOR PROJECT TITLE

Cortés-Ledesma, Felipe (Coordinator) SARS-COV-2 diagnostico by phi29 polymerase amplification (Ref.: COV20/01036)

STATE RESEARCH AGENCY, MINISTRY OF SCIENCE AND INNOVATION / AGENCIA ESTATAL DE INVESTIGACIÓN, MINISTERIO DE CIENCIA E INNOVACIÓN

NATIONAL PLAN FOR SCIENTIFIC AND TECHNICAL RESEARCH AND INNOVATION (2013-2016 AND 2017-2020)

EXCELLENCE NETWORKS / REDES DE EXCELENCIA

PRINCIPAL INVESTIGATOR PROJECT TITLE

Fernández-Capetillo, Óscar (Coordinator) Research Network UBIRed: Ubiquitin like proteins in signalling, proliferation and cancer (Ref.: SAF2017-89693-REDT)

Malumbres, Marcos (Coordinator) Research Network DIFFER: Balancing proliferation and differentiation: mechanism and relevance in human disease (Ref.: RED2018-02721-1)

CHALLENGES-COLLABORATION PROJECTS / PROYECTOS RETOS-COLABORACIÓN

PRINCIPAL INVESTIGATOR PROJECT TITLE

Barbacid, Mariano New approaches for treatment of lung cancer (Ref.: RTC-2017-6576-1)

Martín-Torrecuadrada, Jorge L.; Muñoz, Inés ATTACK: Cancer immunotherapy with bispecific antibodies that engage T-lymphocytes (Ref.: RTC-2017-5944-1)

Real, Francisco X. IMMOPDL2: Preclinical development of antibodies against the immunomodulator PD-L2 for the treatment of diseases caused by cell death. Validation of the strategy in residual tumors and fibrosis (Ref.: RTC-2017-6023-1)

R&D ACTIVITIES PROGRAMME IN TECHNOLOGIES:

PRINCIPAL INVESTIGATOR PROJECT TITLE

Llorca, Óscar Programa TecBioCM: Tecnologías Aplicadas al Estudio de Nanomáquinas Biológicas (Ref.: F008/NMT4483)

SYNERGY PROJECTS:

PRINCIPAL INVESTIGATOR PROJECT TITLE

Llorca, Óscar Programa NanBioCancer-CN: Nanobiotecnología Estructural y Molecular de Procesos de Reparación de ADN relacionados con Cáncer (Ref.: 1208/BIO474)

3, 4, 5 This Programme is cofunded by the European Regional Development Fund (ERDF).

6 These Programmes are co-funded by the European Regional Development Fund (ERDF) and the European Social Fund (ESF).
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SCIENTIFIC FOUNDATION OF THE SPANISH ASSOCIATION AGAINST CANCER / FUNDACIÓN CIENTÍFICA DE LA ASOCIACIÓN ESPAÑOLA CONTRA EL CÁNCER (AECC)

PRINCIPAL INVESTIGATOR	PROJECT TITLE

Barbacid, Mariano
(Coordinator)
A multifaceted approach to target pancreatic cancer (Ref.: GC1617549BARB)

Fernández, Lucía; Martínez, Joaquín
A Phase I Trial of Memory T Cells Expressing an Anti-NKG2D Chimeric Antigen Receptor in Children, Adolescents and Young Adults with Advanced Sarcoma (Ref.: GCAEC0651FPEE)

Real, Francisco X. (Coordinator); Maíns, Núria
Invasive bladder cancer: towards precision medicine (Ref.: GERBAH2955REAL)

Soengas, María S. (Coordinator); Gómez, Gonzalo; Peinado, Héctor
Distinct routes of metastatic dissemination in different melanoma subtypes: Implications in the validation of new tumor biomarkers and therapeutic targets (Ref.: GCB15152978SOEN)

Valiente, Manuel
Study of the molecular mechanisms involved in primary (glioblastoma) and secondary (metastasis) brain tumors to identify novel therapeutic targets and anti-cancer agents, biomarkers to select treatments and novel non-invasive methods for molecular diagnosis (Ref.: GCTRAH0595EAD)

HEALTH RESEARCH PROJECTS:

Llorca, Óscar
Amino acid transporter structure to target glutamate transmission in neuro diseases (Ref.: HR20-00081)

Peinado, Héctor
Defining The Role of Exosome-Secreted Micropeptides in Pancreatic Cancer (Ref.: HR19-00256)

Soengas, María S.
Exploiting post-transcriptional regulation to uncover novel vulnerabilities of metastatic cells (Ref.: HR17-00232)

LA MARATÓ DE TV3 FOUNDATION / FUNDACIÓN "LA MARATÓ DE TV3"

PRINCIPAL INVESTIGATOR	PROJECT TITLE

González-Suárez, Eva
Identification of mechanisms of response to CDK4/6 inhibition in hormone receptor-positive breast cancer (Ref.: 43/C/2019)

Valiente, Manuel
Organ-specific biomarkers and therapies to improve the management of brain metastasis (Ref.: 141/C/2019)

CAIXAIMPULSE COVID-19:

Cortés-Ledesma, Felipe
(Coordinator)
Simple and rapid SARS-CoV-2 diagnostic test by phi29 polymerase amplification (Ref.: CF01-00005)
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SCIENTIFIC MANAGEMENT | COMPETITIVE FUNDING

NATIONAL GRANTS INDIVIDUAL PROJECTS

INSTITUTE OF HEALTH CARLOS III / INSTITUTO DE SALUD CARLOS III (ISCIII) STRATEGIC HEALTH ACTION / ACCIÓN ESTRATÉGICA EN SALUD (AES)

RESEARCH PROJECTS IN HEALTH'

PRINCIPAL INVESTIGATOR PROJECT TITLE

Benítez, Javier (until July 2020); Urioste, Miguel Massive sequencing contributes to decipher the genetic bases of families with rare tumors (Ref. PI18/00440)

Cascón, Alberto Molecular, OMIC and functional characterisation of mutations in the gena DLST in patients with pheochromocytoma/paraganglioma (Ref. PI18/00454)

Guerra-González, Carmen The stroma as a therapeutic target of pancreatic cancer (Ref. PI19/00554)

Olmos, David Identification of lethal subtypes of prostate cancer by integration of transcriptomic, genomic and clinical data (Ref. PI19/01380)

Ortega, Ana Targeting disregulated nutrient-sensing pathway in follicular lymphoma (Ref. PI18/00684)

Quintela, Miguel Ángel Longitudinal, single-cell analysis of immunomodulator/antiangiogenic therapies in advanced breast cancer: a refined tool for precision medicine (Ref. PI18/00454)

Robledo, Mercedes Progression related mechanisms in endocrine and neuroendocrine tumours (Ref. PI17/0796)

Rodríguez, Sandra Study of the role of epigenetic modifications in the development of Ewing sarcoma: High-throughput screening of epigenetic genes using CRISPR-libraries in human (1; 22) × t cells (Ref. PI17/02303)

TECHNOLOGICAL DEVELOPMENT PROJECTS / PROYECTOS DE DESARROLLO TECNOLÓGICO'

PRINCIPAL INVESTIGATOR PROJECT TITLE

Rodríguez, Sandra CRISPR mediated targeting of amplified oncogenes for Neuroblastoma-directed therapy (Ref.: DTS19/00111)

SARS-COV-2 AND COVID-19 RELATED ILLNESS RESEARCH PROJECTS'

PRINCIPAL INVESTIGATOR PROJECT TITLE

Ortega, Sagrario Models pre-clínicos en ratón para el estudio de Covid19 y ensayo de estrategias terapéuticas (Ref.: COV20/00532)

NATIONAL PLAN FOR SCIENTIFIC AND TECHNICAL RESEARCH AND INNOVATION CENTRES OF EXCELLENCE “SEVERO OCHOA” AND UNITS “RAMIRO DE MAEZTU” / SUBPROGRAMA DE APOYO A CENTROS DE EXCELENCIA “SEVERO OCHOA” Y UNIDADES “RAMIRO DE MAEZTU”

PRINCIPAL INVESTIGATOR PROJECT TITLE

Blasco, María Center of Excellence “Severo Ochoa” (Ref.: CEX2009-000891-S)

CHALLENGES-RESEARCH PROJECTS / PROYECTOS RETOS-INVESTIGACIÓN'

PRINCIPAL INVESTIGATOR PROJECT TITLE

Al-Shahrour, Fátima ESSENCE: Extrinsic control of the skin stem cell niche in neuroendocrine tumours (Ref.: PI17/01796)

Djouder, Nabil HEPATOCAR: Studying the Role and Function of MCRS1 in Hepatocellular Carcinoma Development (Ref.: RTI2018-094634-B-I00)

Effyan, Alejandro PhysioTOR: The physiological control of the nutrient-mTOR axis and its deregulation in cancer and aging (Ref.: PI2019-1040298-B-I00)

Fernández-Capetillo, Óscar RESCATE: Mechanisms of resistance to anticancer therapies (Ref.: RTI2018-102204-B-I00)

Llorente, Ana COHESIN3D: Cohesin functions in development, differentiation and disease (Ref.: BFU2015-71376-R)

Losada, Ana COHESIN2: Molecular mechanisms of variant cohesin function (Ref.: BFU2016-79841-R)

Macintyre, Geoffrey J. TTCIN: Therapeutic targeting of chromosomal instability in cancer (Ref.: PI2019-1064988-B-I00)

Méndez, Juan REPLICON2: Control of eukaryotic DNA replication (Ref.: BFU2016-80402-R)

Méndez, Juan REPLICONT: Mechanisms of DNA replication and damage tolerance (Ref.: P12019-10670788-B-I00)

Méndez, Juan REPATOM: Mechanisms of DNA replication and damage tolerance (Ref.: RTI2018-102204-B-I00)

Munoz, Javier EPI-MASS: Epigenetic modifiers in pluripotency: a proteomic analysis of non-Histone protein methylation (Ref.: PI2016-74962-R)

Ortega, Sagrario ESSENTIAL: Extrinsic control of the skin stem cell niche in homeostasis and cancer (Ref.: BFU2015-71376-R)

6, 7, 9 This Programme is cofunded by the European Regional Development Fund (ERDF)

10, 11 This Programme is cofunded by the European Regional Development Fund (ERDF)
### Tables

#### Grants for Research Projects in Childhood Cancer:

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<td>Bisaccio, Maria</td>
<td>Targeting telomeres in neuroblastosoma (Ref.: CDCP180001BIS)</td>
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<th>Principal Investigator</th>
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<tr>
<td>Efeyan, Alejo</td>
<td>Nutrient signaling in the pathogenesis and treatment of B cell Lymphoma (Ref.: LABAE160001EFE)</td>
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<tr>
<td>Peñado, Héctor</td>
<td>Defining the mutational landscape in plasma and lymphatic fluid-derived exosomes in melanoma patients (Ref.: LABAE19027FEN)</td>
</tr>
<tr>
<td>Rodríguez, Sandra</td>
<td>Programable detection and inhibition of fusion oncogenes using CRISPR/Cas13 (Ref.: LABAE20049RODR)</td>
</tr>
<tr>
<td>Squatrito, Massimo</td>
<td>Novel therapeutic approaches for therapy-resistant malignant brain tumors (Ref.: LABAE20005SQUA)</td>
</tr>
<tr>
<td>Valiente, Manuel</td>
<td>New treatments for brain metastasis based on the study of their biology (Ref.: LABAE19002VALI)</td>
</tr>
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#### Grants for Research Projects in Cancer:

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<tr>
<th>Principal Investigator</th>
<th>Project Title</th>
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<tbody>
<tr>
<td>Losada, Ana</td>
<td>Identification of a gene signature associated with aggressive Ewing Sarcoma for diagnostic and therapeutic purposes (Ref.: PROY10046LOSA)</td>
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<tr>
<td>Fernández-Capetillo, Óscar</td>
<td>Targeting the histone methyltransferase SETDB2 in cancer: from biomarker identification to drug development and mechanisms of resistance (Ref.: PROY1001FERN)</td>
</tr>
<tr>
<td>Olmos, David</td>
<td>Genomic epidemiology and clinical implications of DNA-repair genes and other oncogenic drivers in metastatic hormone-sensitive prostate cancer (Ref.: PROY900540LMO)</td>
</tr>
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#### “Ideas Semilla” Grants (Seed Funding):

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<th>Principal Investigator</th>
<th>Project Title</th>
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<tr>
<td>Gonzalez-Suárez, Eva</td>
<td>RANK, instead of RANKL, as a new therapeutic target in Triple Negative Breast Cancer (Ref.: IDEAS190500Z)</td>
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<tr>
<td>Rodríguez, Cristina</td>
<td>Bypassing Nonsense-Mediated mRNA Decay to enhance ImmuneResponse in cancer (Ref.: IDEAS2003600DR)</td>
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#### Challenges-Research Projects / Proyectos Retos-Investigación:

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<tr>
<th>Principal Investigator</th>
<th>Project Title</th>
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<tr>
<td>Park, Solip</td>
<td>CancerFitness: Systematic analysis of the cancer fitness landscape for cancer genes across cancer types (Ref.: PID2019-10957FA-XD)</td>
</tr>
<tr>
<td>Peñado, Héctor</td>
<td>EXO-NGFR: Analysing the relevance exosome-derived NGFR during pre-metastatic niche formation (Ref.: SAF2017-82924-R)</td>
</tr>
<tr>
<td>Plaza, Isin</td>
<td>ESPEROET: Structure-function studies of oncogenic RET kinase fusions in human cancers: from mechanism of action to targeted therapy (Ref.: BFU2017-86710-R)</td>
</tr>
<tr>
<td>Real, Francisco X.</td>
<td>TF-PDAC: Transcription factors in pancreatic cancer: from biology to therapy (Ref.: RTD2019-10037-R-100)</td>
</tr>
<tr>
<td>Rodríguez, Cristina</td>
<td>PREDICT: Identification of genetic markers and physiopathologic factors predictive of the peripheral neuropathy of paclitaxel and of other oncologic drugs: massive sequencing of candidate genes (Ref.: SAF2016-64850-R)</td>
</tr>
<tr>
<td>Rodríguez, Cristina</td>
<td>RCM MARKER: Improving the clinical management of advanced renal cell carcinoma through genomic technologies (Ref.: RTD2019-05503-R-100)</td>
</tr>
<tr>
<td>Soengas, María S.</td>
<td>MEL-STOP: Whole-body imaging of melanoma metastasis as a platform for gene discovery and pharmacological testing (Ref.: SAF2017-89533-R)</td>
</tr>
<tr>
<td>Squatrito, Massimo</td>
<td>GLO-TRK: Tracking down oncogenic genetic rearrangements in gliomas (Ref.: RTD2018-10235-R-100)</td>
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<td>Valiente, Manuel</td>
<td>STAT3 ReACTIVE: Biology of STAT3-reactive astrocytes in brain metastasis (Ref.: SAF2017-89645-R)</td>
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#### Explora Projects / Proyectos Explora:

<table>
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<tr>
<th>Principal Investigator</th>
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<tbody>
<tr>
<td>Malumbres, Marcos</td>
<td>Improving naive pluripotency and the generation of insulin-producing cells with a single microRNA (Ref.: SAF2017-92729-EXP)</td>
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<td>Rodríguez, Sandra</td>
<td>Delivery of functional CRISPR component by pseudotyped virus-like particles (Ref.: BXO2017-93722-EXP)</td>
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#### Research Europe / Europa Investigación:

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<td>Peñado, Héctor</td>
<td>LiquidEV: Use of liquid biopsy of extracellular vesicles and ctDNA in plasma and lymphatic fluid as a novel diagnostic and prognostic test in melanoma patients (Ref.: EIN2019-03337)</td>
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#### Scientific Infrastructures / Infraestructuras Científico-Tecnológicas:

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<tr>
<td>Megías, Diego</td>
<td>Grant for acquiring scientific equipment: high-resolution microscope based on Stimulated Emission Depletion (STED) (Ref.: EGC2019-03679-P)</td>
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*This Programme is cofunded by the European Regional Development Fund (ERDF).*
| **LEONARDO GRANTS** | **SCIENTIFIC MANAGEMENT | COMPETITIVE FUNDING** |
|-------------------|--------------------------|
| **PRINCIPAL INVESTIGATOR** | **PROJECT TITLE** | **BBVA FOUNDATION / FUNDACIÓN BBVA** |
| Olmeda, David | Nuevas estrategias para el tratamiento preventivo de la enfermedad metastásica en Melanoma (Ref: IN18_BBM_TRA_0293) |

| **SCIENTIFIC RESEARCH TEAMS** | **PRINCIPAL INVESTIGATOR** | **PROJECT TITLE** | **CAIXA FUNDATION AGAINST CANCER / FUNDACIÓN CAIXA CONTRA EL CÁNCER** |
|-----------------------------|--------------------------|------------------|
| **PRINCIPAL INVESTIGATOR** | **PROJECT TITLE** | **CAIXA FUNDATION AGAINST CANCER / FUNDACIÓN CAIXA CONTRA EL CÁNCER** |
| Blasco, María | TRF1 inhibitors as a first-in-class therapy for glioblastoma and lung cancer (Ref: CIB1-00016) |
| Rodríguez, Sandra | Gene therapy for human cancers driven by fusion genes (Ref: CI18-00017) |
| Malumbres, Marcos; Salazar, María (until July 2020) | mRNA-based strategy to expand cell therapy potential for treating diabetes (Ref: CIB1-00015) |

| **EXCELLENCE GRANTS** | **PRINCIPAL INVESTIGATOR** | **PROJECT TITLE** | **LA CAIXA BANKING FOUNDATION / FUNDACIÓN BANCARIA “LA CAIXA”** |
|-----------------------|--------------------------|------------------|
| Olmos, David | Addressing the biological and clinical role of RB1 loss and DNA repair defects in lethal prostate cancer (Ref: EXCELLENCE 19-26) |

| **CARMEN DELGADO/MIGUEL PÉREZ-MATEO GRANTS** | **PRINCIPAL INVESTIGATOR** | **PROJECT TITLE** | **SPANISH ASSOCIATION OF PANCREATOLOGY / ASOCIACIÓN ESPAÑOLA DE PANCREATOLOGÍA** |
|---------------------------------------------|--------------------------|------------------|
| Guerra, Carmen | Desarrollo de estrategias terapéuticas dirigidas contra el estroma del cáncer de páncreas |
| Malats, Núria | Marcadores microbianos para el diagnóstico del adenocarcinoma ductal de páncreas |

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<td>Exploiting signaling dependencies and metabolic vulnerabilities of B cell lymphoma</td>
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| **LA CAIXA BANKING FOUNDATION / FUNDACIÓN BANCARIA “LA CAIXA”** | **ANNUAL REPORT 2020** | **224** | **SPANISH NATIONAL CANCER RESEARCH CENTRE, CNIO** | **225** |