

## 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 is used not only to finance the Centre's outstanding R&D activities, but also strategic actions in innovation together with industry partners. The funding is also used to support other relevant activities related to dissemination and scientific outreach; these activities are aimed at promoting public awareness. In 2022, researchers at the CNIO were involved in 152 projects that received extramural funding.

During this same year, the CNIO actively participated in a total of 66 collaborative projects: 17 were international collaborative projects (4 of which are coordinated by the CNIO), and 49 were collaborative projects conducted at the national level (16 of them are coordinated by the CNIO). The international collaborative projects were funded by the European Union through its research & innovation framework programmes Horizon 2020 (2014-2020) and Horizon Europe (2021-2027); the US National Institutes of Health (NIH); the US Department of Defense (DoD); the Paradifference Foundation; Worldwide Cancer Research; and the Lustgarten-Foundation-Stand-up to Cancer Initiative. At national level, collaborative projects received important public grants from the Strategic Health Action that is managed by the Institute of Health *Carlos III (ISCIII)*, the State Research Agency of

the Spanish Ministry of Science and Innovation (*AEI/MCIN*), and the R&D Activities Programmes of the Community of Madrid; most of the projects were co-funded by European Structural and Investment Funds (European Regional Development Fund and European Social Fund). The CNIO also obtained a significant number of grants funded by NextGeneration EU funds to develop strategic projects to foster recovery from the COVID-19 crisis, in accordance with the Spanish Recovery, Transformation and Resilience Plan (*PRTR*). Private funders and charities also recognised the excellence of our scientific projects, among them, the Scientific Foundation of the Spanish Association Against Cancer (*FC AECC*), the *Ramón Areces* Foundation, *La Marató de TV3* Foundation, the *BBVA* 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 2022, 13 of these projects received international funds, while 73 of them received national funding (mainly from the *AEI/MCIN*, the *ISCIII*, and private foundations). The international individual projects are funded by the European Union (7 European Research Council [ERC] grants and 6 Marie Skłodowska-Curie Actions), Worldwide Cancer Research, the American Thyroid Association, and the Mark Foundation for Cancer Research.

## INTERNATIONAL GRANTS COLLABORATIVE PROJECTS

### EUROPEAN UNION RESEARCH & INNOVATION FRAMEWORK PROGRAMME



#### HORIZON EUROPE (2021-2027)

##### RESEARCH INFRASTRUCTURES (PILLAR I)

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Al-Shahrour, Fátima	EOSC4Cancer: A European-wide foundation to accelerate Data-driven Cancer Research (Ref.: 101058427)

##### HEALTH PROGRAMME (PILLAR II)

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Ortega, Eva	REACT: Respiratory Host-Pathogen Interaction (Ref.: 101057129)

##### MARIE SKŁODOWSKA-CURIE ACTIONS (PILAR I)

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Soengas, Maria S.	MADRIDNIGHT: Researchers and citizens: facing together the European challenges (Ref.: 101061343)

#### HORIZON 2020 (2014-2020)

##### FET OPEN - NOVEL IDEAS FOR RADICALLY NEW TECHNOLOGIES

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Valiente, Manuel	NanoBRIGHT: BRInGing nano-pHoTonics 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)

##### TRUSTED DIGITAL SOLUTIONS AND CYBERSECURITY IN HEALTH AND CARE

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Malats, Núria; Real, Francisco X.	PANCAIM: Pancreatic cancer AI for genomics and personalized Medicine (Ref.: 101016851)

##### MARIE SKŁODOWSKA-CURIE ACTIONS (MSCA)

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Peinado, Héctor	ITN proEVLifecycle: The life cycle of extracellular vesicles in prostate cancer: from biogenesis and homing, to functional relevance (Ref.: 860303)
Real, Francisco X.	ITN TranSYS: Translational SYStemics: Personalised Medicine at the Interface of Translational Research and Systems Medicine (Ref.: 860895)

**US NATIONAL INSTITUTES OF HEALTH (NIH)**



PRINCIPAL INVESTIGATOR	PROJECT TITLE
Muñoz, Inés	Targeting Mdm2-MdmX E3 ligase for treatment of drug-resistant lymphoma (Ref.: R01CA208352)
Real, Francisco X.	Role of the smooth muscle layer in bladder cancer biology and progression: a systems and experimental approach (Ref.: R21CA266660)
Tress, Michael	GENCODE: Integrated human genome annotation: generation of a reference gene set (Ref.: U41 HG007234)

**US CONGRESSIONALLY DIRECTED MEDICAL RESEARCH PROGRAMS (CDMRP)/US DEPARTMENT OF DEFENSE**



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)

**THE PARADIFFERENCE FOUNDATION**



PRINCIPAL INVESTIGATOR	PROJECT TITLE
Al-Shahrour, Fátima Robledo, Mercedes (Coordinator)	Integration of multi-omics profiling and immune contexture in metastatic PPGL patients

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



PRINCIPAL INVESTIGATOR	PROJECT TITLE
Valiente, Manuel (Coordinator)	SI00A9-dependent radiation resistance in brain metastasis (Ref.: 19-0177)

**LUSTGARTEN FOUNDATION & STAND-UP2CANCER**



PRINCIPAL INVESTIGATOR	PROJECT TITLE
Malats, Núria	Pancreatic Cancer Collective - Computational Approaches To Identifying High-Risk Pancreatic Cancer Populations: High Risk Cohorts Through Molecular and Genetic Data (Ref.: SU2C #6179)

**FUNDACIÓN RAMÓN ARECES/CNIO/ WEIZMANN INSTITUTE OF SCIENCE**



PRINCIPAL INVESTIGATOR	PROJECT TITLE
Soengas, María S. (Coordinator)	Heterogeneity in melanoma metastasis and resistance to immune checkpoint blockade
Malats, Núria; Real, Francisco X. (Coordinator)	MIT-BC Study: Tumour Microbiome and Immune profiles as predictors of Treatment response in high-risk Non-Muscle Invasive Bladder Cancer

**INTERNATIONAL GRANTS INDIVIDUAL PROJECTS**

**EUROPEAN COMMISSION**



HORIZON 2020 (2014-2020)	
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, Maria	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)
Fernández-Capetillo, Óscar	ERC Proof of Concept TARGETSET: Commercial feasibility of targeting the histone methyltransferase SETD8 in cancer: New chemical entities and biomarkers (Ref.: 963443)
González, Eva	ERC Consolidator Grant PLEIO-RANK: Pleiotropic treatment of cancer: RANK inhibitors targeting cancer stem cells and immunity (Ref.: 682935)
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)

**MARIE SKŁODOWSKA-CURIE ACTIONS, INDIVIDUAL FELLOWSHIPS (MSCA-IF)**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Martínez, Joaquín; Velasco, María	MATChing: Mechanically Activated Channels in Glioma: the role of mechanoreceptor Piezo1 and hnRNP K in cancer as novel oncoregulators (Ref.: 101027864)
Quintela, Miguel A.; Jimeno, Rebeca	P70-IMMUNEBREAST: Tumour compartment-specific effects of P70S6K in early triple negative breast cancer: regulation of antitumor immune response and therapeutic implications (Ref.: 893597)
Real, Francisco X. Zagorac, Slađana	PDASwITch: Super-enhancer modules controlling plasticity and response to therapy in pancreatic cancer (Ref.: 895943)

**WORLDWIDE CANCER RESEARCH (WCR) AND FUNDACIÓN CIENTÍFICA DE LA ASOCIACIÓN ESPAÑOLA CONTRA EL CÁNCER (FC AECC)**



PRINCIPAL INVESTIGATOR	PROJECT TITLE
Malumbres, Marcos	Exploring the use of CDK4/6 inhibitors in combination with classical chemotherapy (Ref.: 20-0155)

**AMERICAN THYROID ASSOCIATION (ATA), COFUNDED BY BITE ME CANCER (BMC)**



PRINCIPAL INVESTIGATOR	PROJECT TITLE
Montero, Cristina	Discovering novel molecular nodes involved in MTC development and evolution (Ref.: GRANT2020-000000150)

**MARK FOUNDATION FOR CANCER RESEARCH**



PRINCIPAL INVESTIGATOR	PROJECT TITLE
Valiente, Manuel	ASPIRE project: Deconstructing the biology of local relapse post-surgery to develop novel preventive strategies in brain metastasis

**NATIONAL GRANTS COLLABORATIVE PROJECTS**

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



**RESEARCH PROJECTS IN HEALTH / PROYECTOS DE INVESTIGACIÓN EN SALUD<sup>1</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Gallardo, Miguel	Deciphering the role of hnRNP K in multiple myeloma (Ref. PI21/00191)
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)
González-Neira, Anna (Coordinator)	Transcriptome-wide association study of breast cancer women: a new strategy to identify novel risk genes for anthracycline-induced cardiotoxicity in the era of precision medicine (Ref. PI21/00795)
Malats, Nuria (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.: PI18/01347)
Osorio, Ana (Coordinator)	Optimising massive sequencing strategies for the identification and clinical translation of new susceptibility genes implicated in familial breast cancer (Ref.: PI19/00640)
Robledo, Mercedes (Coordinator)	Characterization of new drivers associated with development and progression of rare endocrine and neuroendocrine tumours. Predictive markers of sensitivity to treatment (Ref.: PI20/01169)

**JOINT INTERNATIONAL COLLABORATIVE ACTIONS: ERA-NETS**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Barbacid, Mariano	ERA PerMed: Personalized multimodal therapies for the treatment of lung cancer (Ref.: AC20/00114)

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



**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<sup>2</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Ortega, Eva	Plataforma de Biobancos y Biomodelos (Group, Ref.: PT20/0070)

**IMPACT PROJECTS: PRECISION MEDICINE INFRASTRUCTURE<sup>3</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Al-Shahrour, Fátima	IMPACT-Data Science(Ref.: IMP/00019)
González-Neira, Anna	IMPACT-Genomic Medicine (Ref.: IMP/00009)

**NATIONAL PLAN FOR SCIENTIFIC AND TECHNICAL RESEARCH AND INNOVATION**

**STRATEGIC LINES PROJECTS (PUBLIC-PRIVATE COLLABORATIVE PROJECTS)<sup>4</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Barbacid M., Mariano (Coordinator)	Patient-derived pancreatic tumour organoids: a better predictive alternative to animal models (Ref. PLEC2022-009255)
Malumbres, Marcos (Coordinator)	A new patient-derived circulating micrometastases-on-chip platform for drug screen and validation (microMETonChip) (Ref.: PLEC2021-008106)
Malumbres, Marcos	Ultrasensitive optoplasmonic immunoassay platform (Oncodeeplasm) for early detection of breast cancer based on protein biomarkers at the deep region of the blood proteome (Ref.: PLEC2021-007892)
Paz-Ares, Luis (Coordinator)	Sensitization to immunotherapy through manipulation of tumour transcription (Ref. PLEC2022-009241)

**EXCELLENCE NETWORKS / REDES DE EXCELENCIA**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Malumbres, Marcos (Coordinator)	Research Network iDIFFER: Balancing proliferation and differentiation: mechanisms and relevance in human disease (Ref.: RED2018-102723-T)

**PUBLIC-PRIVATE COLLABORATIVE PROJECTS / PROYECTOS DE COLABORACIÓN PÚBLICO-PRIVADA<sup>5</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Peláez, Fernando	An effective and safe system for the treatment of Atrial Fibrillation through Irreversible Electroporation (Ref. CPP2021-008480)
Blasco, María A.	Development of a novel gene therapy for the treatment of Idiopathic Fibrosis (Ref. CPP2021-008483)

1 This Programme is cofunded by the European Regional Development Fund (ERDF) "A Way to Make Europe"



2, 3 This Programme is cofunded by the European Regional Development Fund (ERDF) "A Way to Make Europe"



4, 5 Funded by MCIN/AEI/10.13039/501100011033 and the European Union "NextGenerationEU"/PRTR"



**COMMUNITY OF MADRID /  
COMUNIDAD AUTÓNOMA DE  
MADRID**

**Comunidad de Madrid**

R&D ACTIVITIES PROGRAMME IN BIOMEDICINE <sup>6</sup> :	
PRINCIPAL INVESTIGATOR	PROJECT TITLE
Al-Shahrou, Fátima; Roncador, Giovanna	<i>Programa LINFOMAS-CM: Linfomas agresivos, análisis clínico y genómico integrado para una medicina de precisión</i> (Ref.: B2017/BMD-3778)
Blasco, María	<i>Programa RypSE-CM: RNA y proteínas de unión a RNA. Implicaciones en salud y enfermedad</i> (Ref.: B2017/BMD-3770)
Djouder, Nabil	<i>Programa TomoXliver-CM: Estudio de la disfunción del hepatocito desde un abordaje multidisciplinar</i> (Ref.: B2017/BMD3817)
Malumbres Marcos (Coordinator); Barbacid, Mariano	<i>Programa iLUNG-CM: Terapias personalizadas y nanotecnología en cáncer de pulmón</i> (Ref.: B2017/BMD-3884)
Mulero, Francisca	<i>Programa RENIM-CM: Red Madrileña de Nanomedicina en Imagen Molecular</i> (Ref.: B2017/BMD-3867)
Quintela, Miguel Ángel	<i>Programa IMMUNOTHERCAN-CM: Inmunidad tumoral e inmunoterapia del cáncer</i> (Ref.: B2017/BMD-3733)
Robledo, Mercedes	<i>Programa TIRONET2-CM: Fisiopatología Tiroidea. Mecanismos implicados en cáncer, autoinmunidad y acción de las hormonas tiroideas</i> (Ref.: B2017/BMD-3724)
Soengas, María S.	<i>Programa NANODENDMEDII-CM: Nanosistemas dendríticos como agentes y vectores terapéuticos en distintas aplicaciones biomédicas (II)</i> (Ref.: B2017/BMD-3703)

**R&D ACTIVITIES PROGRAMME IN TECHNOLOGIES<sup>7</sup>:**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Llorca, Óscar	<i>Programa Tec4BioCM: Tecnologías Aplicadas al Estudio de Nanomáquinas Biológicas</i> (Ref.: P2018/NMT4443)

**SYNERGY PROJECTS:**

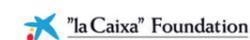
PRINCIPAL INVESTIGATOR	PROJECT TITLE
Llorca, Óscar <sup>1</sup>	<i>Programa NanoBioCancer-CM: Nanobiotecnología Estructural y Molecular de Procesos de Reparación de ADN relacionados con Cáncer</i> (Ref.: Y2018/BIO4747)
Malumbres, Marcos (Coordinator)	<i>Proyecto scCANCER-CM: Convergencia tecnológica para el análisis biofísico y bioquímico de células individuales en la progresión del cáncer de mama</i> (Ref.: Y2020-BIO-6519)
Ortega, Sagrario (Coordinator); Blasco, María	<i>Proyecto COVID-PREclinical-MODEls: Modelos Animales Para el Estudio de la Covid-19. Desarrollo Pre-Clinico de Estrategias Preventivas y Terapéuticas</i> (Ref.: Y2020/BIO-6576)

**SCIENTIFIC FOUNDATION OF  
THE SPANISH ASSOCIATION  
AGAINST CANCER /  
FUNDACIÓN CIENTÍFICA DE  
LA ASOCIACIÓN ESPAÑOLA  
CONTRA EL CÁNCER (AECC)**


COORDINATED GROUPS	
PRINCIPAL INVESTIGATOR	PROJECT TITLE
Barbacid, Mariano (Coordinator)	A multifaceted approach to target pancreatic cancer (Ref.: GC16173694BARB)
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.: GCAEC19019PERE)
Peinado, Hector (Coordinator)	Reactivation of anti-tumour immune cell responses by functionalized nanoparticles in melanoma (Ref.: PRYCO223002PEIN)
Valiente, Manuel	Study of the molecular mechanisms involved in primary (glioblastoma) and secondary (metastasis) brain tumours to identify novel therapeutic targets and anti-cancer agents, biomarkers to select treatments and novel non-invasive methods for molecular diagnosis (Ref.: GCTRA16015SEOA)

**ERA-NETS**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Barbacid, Mariano	ERA PerMed: Personalized multimodal therapies for the treatment of lung cancer (Ref.: PERME20707BARB)
Valiente, Manuel (Coordinator)	ERANET TRANSCAN-3 Reverting immune suppression to elicit brain metastasis control (Ref.: TRNSC213878VALI)
Casanova, María	ERANET TRANSCAN-3 LipidMac: Exploiting lipid-laden macrophages to overcome resistance to cancer immunotherapy (Ref.: TRNSC213885CASA)

**"LA CAIXA" BANKING  
FOUNDATION / FUNDACIÓN  
BANCARIA "LA CAIXA"**

**HEALTH RESEARCH PROJECTS:**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Efeyan, Alejo (Coordinator)	NUTRITHELIUM: Decoding the paracrine control of metabolic fitness by endothelial nutrient signalling (Ref.: HR21-00046)
Llorca, Óscar	ASC4Neuro: Amino acid transporter structure to target glutamate transmission in neuro diseases (Ref.: HR20-00081)
Llorca, Óscar	lncRNAs-RS-CRC: Understanding lncRNAs in replicative stress and colorectal cancer: from cancer biology to single-molecules (Ref.: HR21-00176)
Peinado, Héctor	OncoExoPeptides: Defining The Role of Exosome-Secreted Micropeptides in Pancreatic Cancer (Ref.: HR18-00256)
Real, Francisco X.	RBM10across: RBM10, a novel splicing regulator and tumour suppressor: from mechanisms to therapies (Ref.: HR21-01208)
Soengas, María S.	METSTOP: Exploiting post-transcriptional regulation to uncover novel vulnerabilities of metastatic cells (Ref.: HR17-00232)
Zugazagoitia, Jon	IL7R_LungCan: IL7R in lung cancer development, metastasis and resistance to immune checkpoint inhibitor therapy (Ref.: HR21-00761)

**CAIXAIMPULSE COVID-19:**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Cortés-Ledesma, Felipe (Coordinator)	Simple and rapid SARS-CoV-2 diagnostic test by phi29 polymerase amplification (Ref.: CF01-00005)

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



**BBVA FOUNDATION /  
FUNDACIÓN BBVA**

Fundación BBVA

**LA MARATÓ DE TV3  
FOUNDATION / FUNDACIÓ  
LA MARATÓ DE TV3**Fundació  
La Marató de TV3**hna FOUNDATION /  
FUNDACIÓN hna**hna  
Fundación hna**COVID-19 SCIENTIFIC RESEARCH TEAMS**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Muñoz, Inés	Synthetic immunology to engineer pan-coronavirus immunity (Ref.: Biomed-COVID-19_0155)
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)
Rodríguez, Cristina	<i>Estudio farmacogenómico de la toxicidad de Trastuzumab-Deruxtecan en pacientes con cáncer de mama</i>

**STATE RESEARCH AGENCY.  
MINISTRY OF SCIENCE AND  
INNOVATION / AGENCIA  
ESTATAL DE INVESTIGACIÓN.  
MINISTERIO DE CIENCIA E  
INNOVACIÓN****TECHNOLOGICAL DEVELOPMENT PROJECTS / PROYECTOS DE DESARROLLO TECNOLÓGICO<sup>9</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Rodríguez, Sandra	CRISPR-mediated targeting of amplified oncogenes for Neuroblastoma-directed therapy (Ref.: DTS19/00111)
Malumbres, Marcos	A new platform to predict response to CDK4/6 inhibitors in metastatic breast cancer patients (Ref. DTS21/00132)

**NATIONAL PLAN FOR SCIENTIFIC AND TECHNICAL RESEARCH AND INNOVATION****CENTRES OF EXCELLENCE "SEVERO OCHOA" AND UNITS "RAMIRO DE MAEZTU" SUB-PROGRAMME/ SUBPROGRAMA DE APOYO A CENTROS DE EXCELENCIA "SEVERO OCHOA" Y UNIDADES "RAMIRO DE MAEZTU"**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Blasco, María	Centre of Excellence "Severo Ochoa" (Ref.: CEX2019-000891-S)

**R&D EXCELLENCE PROJECTS / PROYECTOS DE I+D EXCELENCIA<sup>10</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Fernández-Leiro, Rafael	CRYOTELO: Structural and molecular characterisation of the shelterin complex (Ref.: PID2020-120258GB-I00)
Llorca, Óscar	Structural and molecular mechanisms regulating the PIKK family of kinases, including DNA- PKcs, SMG1 and mTOR (Ref.: SAF2017-82632-P)

**CHALLENGES-RESEARCH PROJECTS / PROYECTOS RETOS-INVESTIGACIÓN<sup>11</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Al-Shahrour, Fátima	CANTHERHET: Computational targeting of cancer heterogeneity: in silico drug prescription for tumour clonal populations (Ref.: RTI2018-097596-B-I00)
Al-Shahrour, Fátima	CLONTHERTUME: Development of computational multi-omics strategies for targeting therapeutically the tumour and tumour microenvironment heterogeneity (Ref.: PID2021-124188NB-I00)
Barbacid, Mariano	RAFTING: c-RAF, a key mediator of K-RAS driven cancers: Therapeutic approaches (Ref.: RTI2018-094664-B-I00)
Barbacid, Mariano	PERSCAN: Personalized medicine in pancreatic cancer (Ref.: PID2021-124106OB-I00)
Blasco, María	TELOHEALTH: Telomeres and Disease (Ref.: SAF2017-82623-R)
Casanova, María	FibroMac: Macrophage-fibroblast crosstalk in cancer (Ref. PID2021-122292NA-I00)
Cortés, Felipe	super-TOP: Physiopathological implications of DNA supercoiling and topoisomerase function as master regulators of genome dynamics (Ref.: PID2020-119570RB-I00)
Djouder, Nabil	HEPATOCAR: Studying the Role and Function of MCRS1 in Hepatocellular Carcinoma Development (Ref.: RTI2018-094834-B-I00)
Djouder, Nabil	MECHANOCIR: From cirrhosis to hepatocellular carcinoma: a mechanobiology perspective (Ref.: PID2021-122695OB-I00)

**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<sup>8</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Cascón, Alberto	Molecular,OMIC and functional characterisation of mutations in the gene DLST in patients with pheochromocytoma/paraganglioma (Ref.: PI18/00454)
Fernández, Lucía	Exosomes derived from NKG2D CAR T cells (Exo-NKG2D CAR) as therapeutic strategy to treat paediatric CNS tumours (Ref. PI21/01049)
Guerra-González, Carmen	The stroma as a therapeutic target of pancreatic cancer (Ref.: PI19/00514)
Malats, Nuria	Deciphering the complex relationship between asthma/allergy and pancreatic cancer risk (Ref.: PI21/00495)
Olmeda, David	Anti-bacterial stress pathways in melanoma metastasis and response to therapy (Ref. PI21/00641)
Quintela, Miguel Ángel	Longitudinal, single-cell analysis of immunomodulator/antiangiogenic therapies in advanced breast cancer: a refined tool for precision medicine (Ref.: PI19/00454)
Rodríguez, Sandra	Use of CRISPR/Cas13 system for a programmable diagnosis and inhibition of fusion oncogenes (Ref.: PI20/01837)

8 This Programme is cofunded by the European Regional Development Fund (ERDF), "A way of making Europe"



9, 10, 11 This Programme is cofunded by the European Regional Development Fund (ERDF), "A way of making Europe"



**CHALLENGES-RESEARCH PROJECTS / PROYECTOS RETOS-INVESTIGACIÓN<sup>12</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Efeyan, Alejo	PhysioTOR: The physiological control of the nutrient-mTOR axis and its deregulation in cancer and aging (Ref.: PID2019-104012RB-I00)
Fernández-Capetillo, Óscar	RESCATE: Mechanisms of resistance to anticancer therapies (Ref.: RTI2018-102204-B-I00)
Fernández-Capetillo, Óscar	DIEHARD: Overcoming resistance to cancer therapies (Ref.: PID2021-128722OB-I00)
González, Eva	SYSTEMIC-RANK: Systemic and myeloid RANK in mammary gland homeostasis and breast cancer: beyond the epithelium. SYSTEMIC-RANK (Ref.: PID2020-116441GB-I00)
Lorca, Óscar	mTOR-chaperone: Structural and molecular basis for mTOR complex 1 (mTORC1) assembly and activation by the R2TP-HSP90 chaperone system (Ref.: PID2020-114429RB-I00)
Losada, Ana	COHESIN3D: Cohesin functions in development, differentiation and disease (Ref.: PID2019-106499RB-I00)
Macintyre, Geoffrey J.	TTCIN: Therapeutic targeting of chromosomal instability in cancer (Ref.: PID2019-111356RA-I00)
Malumbres, Marcos	breastCDKs: Therapeutic evaluation of the Cdk14-18 subfamily in advanced breast cancer (Ref.: PID2021-128726OB-I00)
Méndez, Juan	REP&TOL: Mechanisms of DNA replication and damage tolerance (Ref.: PID2019-106707RB-I00)
Park, Solip	CancerFitness: Systematic analysis of the cancer fitness landscape for cancer genes across cancer types (Ref.: PID2019-109571RA-I00)
Peinado, Héctor	OUTANERVE: Role of NGFR regulating the immunoevasive phenotype of melanoma metastasis initiating cells (Ref.: PID2020-118558RB-I00)
Plaza, Iván	ESFRRET: Functional and structural characterization of KIF5B-RET rearrangements (Ref.: PID2020-117580RB-I00)
Real, Francisco X.	TF-PDAC Transcription factors in pancreatic cancer: from biology to therapy (Ref.: RTI2018-101071-B-I00)
Real, Francisco X.	PDAC-MolPrev: An integrative approach towards the prevention of pancreatic cancer using mouse models and genomic tools (Ref.: PID2021-128125OB-I00)
Rodríguez, Cristina	RCC-MARKER: Improving the clinical management of advanced renal cell carcinoma through genomic technologies (Ref.: RTI2018-095039-B-I00)
Rodríguez, Cristina	kidneyALT: Molecular alterations of metastatic renal cell carcinoma of clinical significance for antitumor drug response (Ref.: PID2021-128312OB-I00)
Soengas, María S.	MEL-STOP Whole-body imaging of melanoma metastasis as a platform for gene discovery and pharmacological testing (Ref.: SAF2017-89533-R)
Soengas, María S.	MEL_IMAGE_TREAT: Imaging and targeting metastatic niches in melanoma (Ref.: PID2020-117621RB-I00)
Squatrito, Massimo	GLIO-TRK: TRKking down oncogenic genetic rearrangements in gliomas (Ref.: RTI2018-102035-B-I00)
Valiente, Manuel	Stat3 ReACTIVE: Biology of Stat3+ reactive astrocytes in brain metastasis (Ref.: SAF2017-89643-R)

**SCIENTIFIC INFRASTRUCTURES / INFRAESTRUCTURAS CIENTÍFICO-TECNOLÓGICAS<sup>13</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Megías, Diego	Implementation of automated microscopy platform for high-performance screening (High Content Screening) (Ref.: EQC2021-007743-P)
Mulero, Francisca	High Resolution Magnetic resonance 3T based in superconducting magnet without helium as cryogenizer (Ref.: EQC2021-006797-P)

**PROOF OF CONCEPT<sup>14</sup>**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Malumbres, Marcos	Implementing CDK16-18 targeted therapies for cancer treatment (Ref. PDC2022-133408-I00)
Peinado, Hector	THankX: Development of THX-B as a novel anti-metastatic agent (Ref.: PDC2021-121102-I00)
Soengas, María S.	MDK-INHIBITORS: rewiring tumour-immune system crosstalk by targeting MIDKINE (Ref.: PDC2021-121831-I00)

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Blasco, María	CNIO Artistic Residences (Ref. FCT-21-17623)

**SPANISH FOUNDATION FOR SCIENCE AND TECHNOLOGY / FUNDACIÓN ESPAÑOLA PARA LA CIENCIA Y TECNOLOGÍA (FECYT)**



**SCIENTIFIC FOUNDATION OF THE SPANISH ASSOCIATION AGAINST CANCER / FUNDACIÓN CIENTÍFICA DE LA ASOCIACIÓN ESPAÑOLA CONTRA EL CÁNCER (AECC)**



**GRANTS FOR RESEARCH PROJECTS IN CHILDHOOD CANCER:**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Blasco, María	Targeting telomeres in neuroblastoma (Ref.: CICPF18004BLAS)

**GRANTS FOR EMERGING GROUPS (AECC LAB):**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Peinado, Héctor	Defining the mutational landscape in plasma and lymphatic fluid-derived exosomes in melanoma patients (Ref.: LABAE19027PEIN)
Rodríguez, Sandra	Programmable detection and inhibition of fusion oncogenes using CRISPR/Cas13 (Ref.: LABAE20049RODR)
Valiente, Manuel	New treatments for brain metastasis based on the study of their biology (Ref.: LABAE19002VALI)

12 This Programme is cofunded by the European Regional Development Fund (ERDF), "A way of making Europe"



13, 14 Funded by MCIN/AEI/10.13039/501100011033 and the European Union "NextGenerationEU"/PRTR"



**GRANTS FOR RESEARCH PROJECTS IN CANCER:**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Djouder, Nabil	Elucidating the role of liver cirrhosis in the development of hepatocellular carcinoma: towards novel therapeutic strategies (Ref.: PRYGN21184NABI)
Fernández-Capetillo, Óscar	Targeting the histone methyltransferase SETD8 in cancer: from biomarker identification to drug development and mechanisms of resistance (Ref.: PROYE2010IFERN)
Losada, Ana	Identification of a gene signature associated with aggressive Ewing Sarcoma for diagnostic and therapeutic purposes (Ref.: PROYE20046LOSA)
Real, Francisco X.	STAG2 and FGFR3: cooperation with the DREAM complex in bladder cancer (Ref.: PRYGN223005REAL)

**"IDEAS SEMILLA" GRANTS (SEED FUNDING):**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Rodríguez, Cristina	Bypassing Nonsense Mediated mRNA Decay to enhance immunotherapy response in cancer (Ref.: IDEAS20138RODR)

**HEALTH RESEARCH PROGRAMME**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Fernández-Capetillo, Óscar	RNALS: Modulating nucleolar activity and stress responses as a therapeutic strategy in ALS (Ref.: HR22-00890)

**HEALTH RESEARCH PROGRAMME**

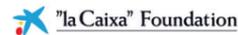
PRINCIPAL INVESTIGATOR	PROJECT TITLE
Blasco, María	Targeting Telomeres in Cancer (Ref.: HR18-00023)
Soengas, María S.	Immunomodulatory drivers in melanoma progression and therapy response (Ref.: HR20-00465)

**EXCELLENCE GRANTS**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Casanova, María	Network of myeloid vulnerabilities at metastatic site (Ref.: PR_TPD_2020-09)
Olmos, David	Addressing the biological and clinical role of RB1 loss and DNA repair defects in lethal prostate cancer (Re.: EXCELLENCE 19-26)

**CARMEN DELGADO/MIGUEL PÉREZ-MATEO GRANTS**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Guerra, Carmen	<i>Nueva estrategia terapéutica: estroma e inmunoterapia</i>
Malats, Núria	<i>Marcadores microbianos para el diagnóstico del adenocarcinoma ductal de páncreas</i>

**"LA CAIXA" BANKING FOUNDATION AND LUZÓN FOUNDATION / FUNDACIÓN BANCARIA "LA CAIXA" Y FUNDACIÓN LUZÓN****"LA CAIXA" BANKING FOUNDATION / FUNDACIÓN BANCARIA "LA CAIXA"****CRIS FOUNDATION AGAINST CANCER / FUNDACIÓN CRIS CONTRA EL CÁNCER****SPANISH ASSOCIATION OF PANCREATOLOGY / ASOCIACIÓN ESPAÑOLA DE PANCREATOLOGÍA****FERO FOUNDATION / FUNDACIÓN FERO**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Casanova, María	Macrophage-fibroblast cell to cell circuit modulation in NSCLC

**GETNE GROUP / GRUPO GETNE**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Montero, Cristina	<i>Identificación de marcadores moleculares de respuesta a tratamiento con inhibidores tirosina-quinasa en cáncer</i> (Ref.: G2212)

**BBVA FOUNDATION / FUNDACIÓN BBVA**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Efeyan, Alejo	<i>Nuevos modelos animales de translocaciones a la carta para el desarrollo y estudio linfomas de células B</i> (Ref.: PR[19]_BIO_MET_0029)
Peinado, Héctor	<i>Análisis de la mutación BRAF en exosomas circulantes de pacientes de melanoma</i> (Ref.: IN[21]_BBM_TRA_0050)

**SCIENTIFIC RESEARCH TEAMS**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Mulero, Francisca	TherAbnostic: Radioimmunotheranostics for metastatic lung cancer with pretargeted clickable Ab fragments (Ref.: PR[19]_BIO_IMG_0096)
Djouder, Nabil	IMMUNO-KETOCAR: The cholinergic immunosurveillance of ketogenic diet in the treatment of hepatocellular carcinoma (Ref.: EIC21-1-243)

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Ortega, Eva	<i>Red Nacional de Metástasis Cerebral: Implantación, Desarrollo y Coordinación</i> (Ref.: CIVP20S10662)
Peinado, Héctor	Developing a targeted therapy to promote melanoma immune-recognition and suppress metastasis
Valiente, Manuel	Reactive astrocytes as a therapeutic target in brain metastasis

**RAMÓN ARECES FOUNDATION / FUNDACIÓN RAMÓN ARECES**

PRINCIPAL INVESTIGATOR	PROJECT TITLE
Peinado, Héctor	Use of circulating extracellular vesicles and ctDNA from lymphatic fluid exudate obtained postlymphadenectomy as surrogate markers of minimal residual disease in melanoma patients

**GRUPO ESPAÑOL MULTIDISCIPLINAR DE MELANOMA**