



M E Castellano Sánchez

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

I joined Prof. Eugenio Santos group for my Grado de Salamanca studies in 2001 and then went on to carry out my **PhD research (2002-2007)** after obtaining an **FPU fellowship**. By analysing the transcription patterns of knockout cells for H-Ras, N-Ras and the double HN-Ras, we proved that H-Ras and N-Ras have specific functions. During this time, I published **6 scientific articles and 1 review** describing different aspects of RAS proteins function and regulation in physiological conditions and in cancer. Furthermore, I presented my work in several conferences in poster format and as a **selected oral presentation** at the CNIO Meeting DNA Arrays (2003). During my PhD I developed strong technical skills in molecular biology, analysis of cellular signalling and in vivo mouse work and gained a solid understanding of the literature in the field of molecular biology of cancer.

After finishing, I joined Prof. Julian Downward's group as a postdoctoral fellow (**2007-2013**), funded by a grant from Cancer Research UK. I worked on two different projects aimed at understanding the role of RAS signalling through PI3K, one of its main effectors, in lung cancer maintenance and in cell migration. I published **4 scientific articles, 1 review and 1 book chapter**. During this period, I was awarded a **travel grant** to attend a Keystone symposium on "PI3-Kinase signalling in Disease". I acquired a wide range of new technical skills in molecular biology, microCT scanning, time-lapse microscopy, in vivo intratracheal inoculation of cells or viruses and, importantly for my current position, in processes required to dissect the reliance of tumour cells on their microenvironment. Furthermore, I developed project management and leadership skills since I supervised 1 Summer Student and 1 Master Student.

After my postdoctoral training I decided to pursue a career as an independent investigator. I was interested in further exploring how cancer cells promote tumour growth by communicating with its tumour microenvironment. With this in mind, I joined Barts Cancer Institute (BCI), which is part of Queen Mary University of London (London, UK), in 2013 as an **Early Career Researcher**. Apart from research, my teaching responsibilities included tutoring several groups for Medicine and Biomedicine students. I obtained the Postgraduate Certificate in Academic Practice, which certifies that I possess the knowledge and skills required to provide high-quality teaching in higher education settings. In 2018 I was awarded a **Ramón and Cajal** fellowship, being the 4th classified in the Biomedicine area (from more than 250 total applications). I joined Universidad de Salamanca and Centro de Investigación del Cáncer (CIC) in 2019, where I currently have my research group. In March 2019 I obtained a **Científico Titular** position from CSIC.

I present results from my work at national and international conferences and scientific seminars. My research was recognized with a "**Best Talk Award**" at the CRUK Lung Cancer Workshop (York, 2016). My expertise in the RAS field has been recognized by an invitation to **coordinate a special issue on RAS** signalling in Genes that was published in Spring 2021, where I have published **2 reviews**. I have also published **1 book chapter**. I am currently preparing a manuscript on the role of RAS-p110a in macrophage-induced inflammation (will be submitted early in 2022 to Cell Reports) and by the end of 2022 we plan to submit a manuscript on the role of RAS-PI3K in the activation and function of CAFs during lung tumour development.



I actively participate in **science dissemination activities**, participating in round table discussions, radio programs, the science summer camp organised by USAL, “11F: La Mujer y la Niña en Ciencia”, becas de fomento al talento in collaboration with Fundación Salamanca Ciudad de Cultura y Saberes, etc.

As an independent researcher I have been awarded projects/fellowships amounting to over **500.000 €**. We have an **ongoing collaboration with Acerta Pharma** (part of Astra Zeneca Group) since 2017.

I have supervised **1 PhD thesis to completion**, A. Krygowska, who is currently Senior Scientist at Achilles Therapeutics plc (UK). I am currently **supervising 3 PhD students**. I have also supervised **1 postdoc, 12 Master Student** projects, **5 Undergraduate Student** projects and **2 Summer Student** projects (one holding an AECC summer traineeship grant). I hosted and supervised 2 students from “Ciclo Formativo Laboratorio Clínico y Biomédico”.

I am coordinator of the module “Communication strategies for Cancer Research” from the Master Program Biology and Clinic of Cancer (USAL). As part of this module I organise a 2-days Poster exhibition at IBMCC.

I am currently **peer reviewer** of scientific projects for Agencia Estatal de Investigación, and **Review Editor** on the Editorial Board of Molecular and Cellular Oncology and Signalling for Frontiers in Cell and Developmental Biology. I act as an ad hoc reviewer for different scientific journals.

General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

My career to date demonstrates a high level of achievement in key areas needed to elucidate the underlying RAS signalling pathways. The excellence of my research is shown in the high impact papers I have produced throughout my career.

My **h index** is 15. The articles I have produced during my career have been cited 1907 times in total, of which 1071 times occurred in the last 5 years. This makes an average of 214.2 citations per year during the last 5 years of my career.

During my PhD, we demonstrated that HRAS and NRAS have specific, non-overlapping functions. During this time I published **6 scientific articles and 1 review** describing different aspects of RAS proteins function and regulation in physiological conditions and in cancer: 3 as first author (**Oncogene**, 2007 (IF: 6.854; Q1); **Genome Biology**, 2009 (IF: 13.2; Q1); **Genes and Cancer**, 2011 (IF: 4.98; Q1)); 1 as second author (**Exp. Cell. Res.**, 2006 (IF:3.309; Q2)) and 3 as middle author (**EMBO J**, 2010 (IF: 10.6; Q1); **Blood**, 2011 (IF: 13.164; Q1) and **Science Signalling**, 2018 (IF: 7.4; Q1).

During my Postdoc at Dr. Downward's lab I worked on two different projects aimed at understanding the functional role of RAS signalling through PI3K, one of its main effectors, in lung cancer maintenance and in cell migration. I published 5 scientific articles: 2 as first author, including 1 in which I am also **corresponding author** (**Cancer Cell**, 2013 (IF: 22.84; Q1); **Nat Commun**, 2016 (IF: 12.353; Q1); 2 as middle author (**J Clin Invest**, 2014 (IF: 12.575; Q1); **Oncogene**, 2016 (IF: 6.854; Q1)); 1 review (**Genes Cancer**, 2011 (IF: 4.98; Q1)); and 1 book chapter (**Curr Top Microbiol Immunol**, 2010 (IF: 5.829)).

As an **independent researcher** I aim to understand how oncogenic RAS proteins drive cancer development by regulating the interplay between tumour cells and the surrounding microenvironment in lung cancer. My expertise in the RAS field has been recognized by an invitation to write a book chapter on the role of RAS-PI3K in human disease (**Cold Spring Harb Perspect Med**, 2018 (IF: 3.979)) and to coordinate a special issue on RAS signaling for the journal *Genes*, where I contributed with two reviews (**Genes**, 2021 (IF = 4.096; Q2)).

I present my work at national and international conferences and scientific seminars. The importance of my research was recognized with a "**Best Talk Award**" at the CRUK Lung Cancer Workshop (York, 2016).

As an independent researcher I have been awarded projects/fellowships amounting to over **500.000 €**. We have an **ongoing collaboration with Acerta Pharma** (part of Astra Zeneca Group) since 2017.

I have supervised **1 PhD thesis to completion**, and I am currently **supervising 3 PhD students**. I have also supervised **1 postdoc**, **12 Master Student** projects, **5 Undergraduate Student** projects and **2 Summer Student** projects (one holding an AECC summer traineeship grant).

I am coordinator of the module "Communication strategies for Cancer Research" from the Master Program Biology and Clinic of Cancer (USAL) and I organise a 2-days Poster exhibition at IBMCC.



I actively participate in **science dissemination activities**. I am currently **peer reviewer** of scientific projects for Agencia Estatal de Investigación, and **Review Editor** on the Editorial Board of Molecular and Cellular Oncology and Signalling for Frontiers in Cell and Developmental Biology. I act as an ad hoc reviewer for different scientific journals.

**M E Castellano Sánchez**

Surname(s): **Castellano Sánchez**
 Name: **M E**
 ORCID: **0000-0002-8449-4081**
 ResearcherID: **AAA-8087-2020**
 Contact aut. region/reg.: **Castile and León**
 Personal web page: **<http://www.cicancer.org/en/researcher/71/dra-esthercastellano-sanchez>**

Current professional situation

Employing entity: Centro de Investigación del Cáncer **Type of entity:** University Research Institute
Professional category: Investigadora principal del CSIC
Start date: 2020
Type of contract: Permanent employment contract **Dedication regime:** Full time

Previous positions and activities

	Employing entity	Professional category	Start date
1	Ministerio de Ciencia e Innovación. Universidades	Investigadora Ramón y Cajal	03/02/2019
2	FUNDACION GENERAL DE LA UNIVERSIDAD DE SALAMANCA	Profesor Asociado	02/10/2018
3	Centro de Investigación del Cáncer	PhD student	08/01/2002
4	Queen Mary University of London	Lecturer	23/10/2013

- 1** **Employing entity:** Ministerio de Ciencia e Innovación. Universidades **Type of entity:** SEUDGU
Professional category: Investigadora Ramón y Cajal
Start-End date: 03/02/2019 - 28/07/2020
- 2** **Employing entity:** FUNDACION GENERAL DE LA UNIVERSIDAD DE SALAMANCA
Professional category: Profesor Asociado
Start-End date: 02/10/2018 - 02/02/2019
- 3** **Employing entity:** Centro de Investigación del Cáncer **Type of entity:** University Research Institute
Department: Centro de Investigación del Cáncer
Professional category: PhD student **Educational Management (Yes/No):** No
Start-End date: 08/01/2002 - 08/06/2007 **Duration:** 5 years - 5 months
Type of contract: Grant-assisted student (pre or post-doctoral, others)



Performed tasks: During my PhD I developed strong technical skills in molecular biology, analysis of cellular signalling and in vivo mouse work and gained a solid understanding of the literature in the field of molecular biology of cancer, particularly on the role played by RAS proteins in oncology. My PhD studies resulted in the publication of 6 scientific articles and 1 review describing different aspects of RAS protein function and regulation in physiological conditions and in cancer: 3 as first author (Oncogene, 2007; Genome Biology, 2009; Genes and Cancer, 2011); 1 as second author and 3 as middle author (EMBO J, 2010; Blood, 2011 and Science Signalling, 2017). I also presented my work in several national and international conferences in poster format and as a selected oral presentation at the CNIO Meeting DNA Arrays (2003).

4 Employing entity: Queen Mary University of London **Type of entity:** University Research Institute

Professional category: Lecturer

Start date: 23/10/2013

Type of contract: Temporary employment contract

Performed tasks: Investigación y docencia

Applicability in teaching and/or research: My teaching responsibilities include being a tutor in two groups of the module “History Case Studies” (Biomedical Sciences, 3rd year) and in one group of the module “Human Science and Public Health” (Medicine, 2nd year). Furthermore, I supervise one student in the module “Project Skills” (Medicine, 3rd year) and I help coordinate and lecture the module “Personalised Medicine” (Medicine, 2nd year). I also carry out marking activities for several other modules. I have obtained the Postgraduate Certificate in Academic Practice, which is a 60-credit mandatory teaching qualification for UK University Lecturers. It provides training in the key skills required to provide high-quality teaching and learning in higher education settings. As an independent researcher I was awarded 4 projects/fellowships amounting to over £350,000. In addition, I have recently been invited to submit a full application for a CRUK Career Establishment Award (£1,400,000). I have supervised 1 PhD thesis to completion; currently I am supervising 1 PhD student. I have also supervised 6 Master students and the final project of 2 bachelor students. I present my work at national and international conferences and scientific seminars. Recently, the importance of my research was recognized with a “Best Talk Award” at the CRUK Lung Cancer Workshop (York, December 2016). My expertise in the RAS field has recently been recognized by an invitation to write a book chapter on the role of RAS-PI3K in human disease (Krygowska, A.A and Castellano E, Cold Spring Harb Perspect Med, 2017). I am currently a peer reviewer of scientific projects for the Medical Research Council and the Rosetrees Trust, and an ad hoc reviewer for Nature Communications and PLOS One. I am a member of the UK Cell Adhesion Society and the Spanish Society of Biochemistry and Molecular Biology. During this period, I took a career break while on maternity leave for a period of 11 months.



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

University degree: Higher degree

Name of qualification: Licenciado en Bioquímica

Degree awarding entity: Universidad de Salamanca **Type of entity:** University

Date of qualification: 2000

Doctorates

Doctorate programme: Biología y clínica del cáncer

Degree awarding entity: Universidad de Salamanca **Type of entity:** University

Date of degree: 25/05/2007

Attended advanced, improvement and innovative teacher training and new technology courses and seminars focused on improving teaching

Title of course/seminar: Postgraduate Certificate in Academic Practice

Goals of the course/seminar: Mandatory teaching qualification for UK University Lecturers. It provides training in the key skills required to provide high-quality teaching and learning in higher education settings.

Organising entity: Queen Mary University of London **Type of entity:** University

Start-End date: 01/09/2016 - 30/06/2018

Length: 2 years

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
English	A1	A1	A1	A1	A1
Portuguese	B1	B1	B1	B2	C1

Teaching experience



General teaching experience

- 1 Name of the course:** Bioquímica II
University degree: Graduado o Graduada en Farmacia
Start date: 04/02/2019
Entity: Universidad de Salamanca **Type of entity:** University
Faculty, institute or centre: Facultad de Farmacia
- 2 Type of teaching:** Official teaching
Name of the course: Project Skills for the Life Sciences
University degree: Biomedicine
Start date: 11/09/2017
Entity: Queen Mary University of London **Type of entity:** University
Faculty, institute or centre: School of Medicine and Dentistry
City of entity: Londres, United Kingdom
- 3 Name of the course:** History case Studies
University degree: Biomedicine
Start date: 01/09/2016
Entity: Queen Mary University of London **Type of entity:** University
Faculty, institute or centre: School of Medicine and Dentistry
Subject language: English
- 4 Name of the course:** Human Science and Public Health
University degree: Medicine
Start date: 01/09/2016
Entity: Queen Mary University of London **Type of entity:** University
Faculty, institute or centre: School of Medicine and Dentistry

Experience supervising doctoral thesis and/or final year projects

- 1 Project title:** Determinación de nuevas combinaciones inmunoterapéuticas para el tratamiento de cáncer de pulmón
Type of project: Doctoral thesis
Entity: Centro de Investigación del Cáncer **Type of entity:** University Research Institute
City of entity: Salamanca, Spain
Student: Cristian Morillo Losada
Date of reading: 2022
- 2 Project title:** Targeting RAS-PI3K signalling to re-educate the stroma of RAS mutant lung cancers
Entity: Universidad de Salamanca **Type of entity:** University
Student: Víctor Pérez
Date of reading: 2022
- 3 Project title:** Análisis del papel de RAS durante la activación de CAFs mediada por TGF- β
Type of project: End of course project
Co-director of thesis: Irma Manzano
Entity: Universidad de Salamanca **Type of entity:** University



Student: Irma Manzano
Obtained qualification: Trabajo de fin de grado (TFG)
Identify key words: Molecular mechanism of disease
Date of reading: 2020

- 4** **Project title:** Análisis del papel de RAS en la regulación de la expresión de proteínas implicadas en la contractilidad de fibroblastos asociados a cáncer (CAFs) y su papel en la progresión tumoral
Type of project: End of course project
Entity: Universidad de Salamanca **Type of entity:** University
City of entity: Salamanca, Castile and León, Spain
Student: Mónica San Damaso González
Date of reading: 2020
- 5** **Project title:** Análisis de los mecanismos moleculares mediadores de la comunicación entre TAMs y las células tumorales
Type of project: Trabajo de Máster (TFM)
Entity: Centro de Investigación del Cáncer **Type of entity:** University Research Institute
City of entity: Salamanca, Castile and León, Spain
Student: M E Sánchez Pérez
Date of reading: 2020
- 6** **Project title:** Characterization of RAS-p110a signalling in the expression and activation of PPAR α and PPAR γ in macrophages
Type of project: Proyecto de Máster
Entity: Barts Cancer Institute **Type of entity:** University
City of entity: London, United Kingdom
Student: Victoria Tsang
Date of reading: 31/08/2018
- 7** **Project title:** Analysis of the molecular mechanisms controlled by RAS-PI3K during efferocytosis
Type of project: End of course project
Entity: Barts Cancer Institute **Type of entity:** University Research Institute
City of entity: London, United Kingdom
Student: Paloma Ciguenal
Date of reading: 06/06/2018
- 8** **Project title:** Generation of a 3D model for the study of tumour cells and CAF crosstalk
Type of project: End of course project
Entity: Barts Cancer Institute **Type of entity:** University Research Institute
City of entity: London, United Kingdom
Student: Immaculada Ferrera
Date of reading: 04/06/2018
- 9** **Project title:** Characterizing the role of RAS-PI3K interaction in the expression and activation of YAP-1 in CAFs
Type of project: Proyecto de Fin de Máster
Entity: Barts Cancer Institute **Type of entity:** University Centres and Structures and Associated Bodies
City of entity: London, United Kingdom
Student: Neil Magno
Date of reading: 06/2018



- 10** **Project title:** Analysis of the transcriptional program regulated by RAS-PI3K signalling during resolution of inflammation
Type of project: Proyecto de Master
Entity: Barts Cancer Institute **Type of entity:** University Research Institute
City of entity: London, United Kingdom
Student: Giusepina Maniscalco
Date of reading: 24/04/2018
- 11** **Project title:** Matrisome analysis of RAS mutant lung tumours
Type of project: Proyecto de Master
Entity: Barts Cancer Institute **Type of entity:** University Research Institute
City of entity: London, United Kingdom
Student: Ana Alonso-Carriazo Martinez
Date of reading: 27/03/2018
- 12** **Project title:** Exploring novel immunotherapy combinations for the treatment of lung cancer
Type of project: Doctoral thesis
Entity: Barts Cancer Institute **Type of entity:** University
City of entity: London, United Kingdom
Student: Priyankaa Gordyal
Date of reading: 2018
- 13** **Project title:** Understanding the role of RAS-PI3K interaction in macrophages function
Type of project: Doctoral thesis
Entity: Barts Cancer Institute **Type of entity:** University Research Institute
Student: Agata Krygowska
Date of reading: 31/10/2017
- 14** **Project title:** Dissecting the role of RAS signalling in efferocytosis
Type of project: Proyecto de Master
Entity: Barts Cancer Institute **Type of entity:** University Research Institute
City of entity: Londres, Inner London, United Kingdom
Student: Lottie Swinyard
Date of reading: 09/2017
- 15** **Project title:** Understanding the role of RAS in the contractility program of lung cancer associated fibroblasts
Type of project: Trabajo de Master
Entity: Barts Cancer Institute **Type of entity:** University Research Institute
Student: Abshir Hassan
Date of reading: 07/2017
- 16** **Project title:** Disecting the role of RAS-PI3K in extracellular matrix remodeling
Entity: Barts Cancer Institute **Type of entity:** University Research Institute
Student: Jose Lupiciano Martinez Sanchez
Date of reading: 12/2016
- 17** **Project title:** The role of RAS binding to PI3K in macrophages phagocytosis
Type of project: Trabajo de Master
Entity: Barts Cancer Institute **Type of entity:** University Research Institute
City of entity: Londres, Inner London, United Kingdom
Student: Laetitia Gheysen



Date of reading: 06/2016

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

- 1** **Name of the project:** Financiación Ramón y Cajal
Entity where project took place: Centro de Investigación del Cáncer **Type of entity:** University Research Institute
City of entity: Salamanca, Spain
Name principal investigator (PI, Co-PI....): Esther Castellano Sánchez
Funding entity or bodies: Ministerio de Ciencia e Innovación **Type of entity:** NA
City funding entity: Madrid, Community of Madrid, Spain
Start-End date: 2019 - 2024
Total amount: 40.000 €
- 2** **Name of the project:** Targeting RAS-PI3K signalling to re-educate the stroma of RAS mutant lung cancers
Entity where project took place: Universidad de Salamanca - Centro de Investigación del Cáncer
Name principal investigator (PI, Co-PI....): Esther Castellano
N° of researchers: 1
Funding entity or bodies: Ministerio de Ciencia e Innovación. Universidades **Type of entity:** AGENCIA ESTATAL DE INVESTIGACIÓN - Convocatorias 2018 Proyectos de I+D de GENERACIÓN DE CONOCIMIENTO y Proyectos de I+D+i RETOS INVESTIGACIÓN
City funding entity: Madrid, Community of Madrid, Spain
Start-End date: 2019 - 2021
Total amount: 157.000 €
- 3** **Name of the project:** Exploring the effect of Stat3 inhibition in lung cancer
Entity where project took place: Barst Cancer Insitute
Name principal investigator (PI, Co-PI....): Esther Castellano Sánchez
Funding entity or bodies: Acerta Pharma **Type of entity:** Business
Start-End date: 2018 - 2021
Total amount: 50.000 €
- 4** **Name of the project:** Exploring novel immunotherapy combinations for the treatment of lung cancer
Degree of contribution: Coordinator of total project, network or consortium
Entity where project took place: Barts Cancer Institute **Type of entity:** University Research Institute
City of entity: London, United Kingdom
Name principal investigator (PI, Co-PI....): Esther Castellano Sanchez
N° of researchers: 1 **Nª people/year:** 1

**Funding entity or bodies:**

Medical Research Council

Start-End date: 01/10/2017 - 30/09/2020**Duration:** 3 years**Total amount:** 74.266 €**Sub-project amount:** 74.266 €

- 5 Name of the project:** Actualización del equipo existente de micro-tomografía por Rayos-X para imagen in-vivo

Entity where project took place: Universidad de Salamanca **Type of entity:** University

City of entity: Salamanca, Castile and León, Spain

Name principal investigator (PI, Co-PI....): Esther Castellano Sánchez

Nº of researchers: 1

Funding entity or bodies:

Ministerio De Ciencia, Innovación Y Universidades

City funding entity: Salamanca, Spain

Start-End date: 2019 - 2020

Total amount: 105.000 €

- 6 Name of the project:** Dissecting the tumour - extracellular matrix crosstalk in RAS-driven lung cancer

Entity where project took place: Barts Cancer Institute **Type of entity:** University Research Institute

City of entity: Londres, Inner London, United Kingdom

Name principal investigator (PI, Co-PI....): Castellano, E.

Nº of researchers: 1

Funding entity or bodies:

Rosetrees Trust

Type of entity: Foundation

City funding entity: Londres, Inner London, United Kingdom

Start-End date: 01/11/2016 - 01/05/2018

Total amount: 34.941 €

- 7 Name of the project:** Dissecting the tumour microenvironment of KRAS-driven lung cancers

Entity where project took place: Barts Cancer Institute **Type of entity:** University Research Institute

City of entity: Londres, Inner London, United Kingdom

Name principal investigator (PI, Co-PI....): Esther Castellano Sanchez

Nº of researchers: 1

Funding entity or bodies:

Barts Cancer Institute

Type of entity: University Centres and Structures and Associated Bodies

City funding entity: Londres, Inner London, United Kingdom

Start-End date: 12/2016 - 01/08/2017

Total amount: 17.481 €

- 8 Name of the project:** Role of RAS-PI3K in the modulation of kinase signaling in RAS-driven lung tumours

Entity where project took place: Barts Cancer Institute **Type of entity:** University Research Institute

City of entity: Londres, Inner London, United Kingdom

Name principal investigator (PI, Co-PI....): Esther Castellano Sanchez

Nº of researchers: 1

Funding entity or bodies:



CRUK-Barts Cancer Centre Development Fund

Type of entity: University Centres and Structures and Associated Bodies**City funding entity:** Londres, Inner London, United Kingdom**Start-End date:** 11/2014 - 2016**Total amount:** 17.438 €**R&D non-competitive contracts, agreements or projects with public or private entities****1 Name of the project:** Explore the therapeutic effect of Acalabrutinib (ACP-196) in combination with Stat3 inhibitor (AZD9150) in KRAS-driven lung tumour growth**Degree of contribution:** Coordinator of total project, network or consortium**Name principal investigator (PI, Co-PI....):** Esther Castellano Sánchez**Nº of researchers:** 1**Funding entity or bodies:**

Acerta Pharma

Type of entity: Business**City funding entity:** United States of America**Start date:** 01/11/2019**Duration:** 2 years**Total amount:** 50.000 €**2 Name of the project:** Efficacy of the BTK inhibitor Acalabrutinib in a preclinical model of lung cancer**Degree of contribution:** Coordinator of total project, network or consortium**Name principal investigator (PI, Co-PI....):** Esther Castellano Sanchez**Nº of researchers:** 1**Funding entity or bodies:**

Acerta Pharma

Type of entity: Business**City funding entity:** Redwood city, United States of America**Start date:** 01/04/2017**Total amount:** 286.538 €**Scientific and technological activities****Scientific production****H index:** 15**Date of application:** 15/01/2018**Fuente de Índice H:** GOOGLE SCHOLAR**Publications, scientific and technical documents****1** Mendoza, P; Martínez-Martín, N; Bovolenta, E.R; Reyes-Garau, D; Hernansanz-Agustín, P; Delgado, P; Diaz-Muñoz, M.D; Oeste, C.L; Fernández-Pisonero, I; Castellano, E.; Martínez-Ruiz, A; Alonso-Lopez, D; Santos, E; Bustelo, X.R; Kurosaki, T; Alarcón, B. RRas2 is required for germinal center formation to aid B cells during energetically demanding processes. SCI SIGNAL. 29 - 11, pp. 532. 2017.**Type of production:** Scientific paper**Format:** Journal**Position of signature:** 10**Degree of contribution:** Author or co-author of scientific or technical document for the general public

**Total no. authors:** 16**Corresponding author:** No

- 2** Nadia Godin Heymann; Sebastian Brabetz; Miguel Murillo; Marco Saponaro; Claudio Santos Ribeiro; A Loble; Philip East; P Chakravarty; Neil Matthews; G Kelly; S Jordan; Esther Castellano Sanchez; Julian Downward. Tumour-suppression function of KLF12 through regulation of anoikis. ONCOGENE. 35 - 25, pp. 3324 - 3334. 06/2016.

Type of production: Scientific paper**Format:** Journal**Position of signature:** 12**Degree of contribution:** Author or co-author of scientific or technical document for the general public**Total no. authors:** 13**Corresponding author:** No

- 3** Esther Castellano Sanchez; Miriam Molina Arcas; Agata Krygowska; Philip East; Patricia Warne; Alastair Nicol; Julian Downward. RAS signalling through PI3-Kinase controls cell migration via modulation of Reelin expression. NAT COMMUN. 13 - 7, pp. 11245. 04/2016.

Type of production: Scientific paper**Format:** Journal**Position of signature:** 1**Degree of contribution:** Author or co-author of scientific or technical document for the general public**Total no. authors:** 7**Corresponding author:** Yes

- 4** Miguel Murillo; Santiago Selenay; Emma Nye; Esther Castellano Sanchez; Francois Lassailly; Gordon Stamp; Julian Downward. RAS interaction with PI3K p110a is required for tumor-induced angiogenesis. J CLIN INVEST. 124 - 8, pp. 3601 - 3611. 2014.

Type of production: Scientific paper**Format:** Journal**Position of signature:** 4**Total no. authors:** 7**Corresponding author:** No

- 5** Esther Castellano Sanchez; Clare Sheridan; May Zin; Emma Nye; Bradley Spencer Dene; Marcus Diefenbacher; Chris Moore; Madhu Kumar; Miguel Murillo; Eva Gronroos; Francois Lassailly; Gordon Stamp; Julian Downward. Requirement for interaction of PI 3-kinase p110a with RAS in lung tumor maintenance. Cancer Cell. 24 - 5, pp. 617 - 630. 2013.

Type of production: Scientific paper**Format:** Journal**Position of signature:** 1**Total no. authors:** 13**Corresponding author:** No

- 6** S Iborra; M Soto; L Stark Aroeira; Esther Castellano Sanchez; Balbino Alarcón; C Alonso; Eugenio Santos; Edgar Fernández Malavé. H-ras and N-ras are dispensable for T-cell development and activation but critical for protective Th1 immunity. Blood. 117 - 19, pp. 5102 - 5111. 2011.

Type of production: Scientific paper**Format:** Journal**Position of signature:** 4**Total no. authors:** 8**Corresponding author:** No

- 7** M Drosten; A Dhawahir; E Sum; J Urosevic; Carmen Lechuga; Luis Esteban; Esther Castellano Sanchez; Carmen Guerra; Eugenio Santos; Mariano Barbacid. Genetic analysis of Ras signalling pathways in cell proliferation, migration and survival. EMBO Journal. 29, pp. 1091 - 1104. 2010.

Type of production: Scientific paper**Format:** Journal**Position of signature:** 7**Total no. authors:** 10**Corresponding author:** No

- 8** Esther Castellano Sanchez; Carmen Guerrero; Alejandro Núñez; Javier de las Rivas; Eugenio Santos. Serum-dependent transcriptional networks identify distinct functional roles for H-Ras and N-Ras during initial stages of the cell cycle. Genome Biology. 10 - 11, 2009.

Type of production: Scientific paper**Format:** Journal**Position of signature:** 1

**Total no. authors:** 5**Corresponding author:** No

- 9** Esther Castellano Sanchez; Javier De Las Rivas; Carmen Guerrero; Eugenio Santos. Transcriptional networks of knockout cell lines identify functional specificities of H-Ras and N-Ras: Significant involvement of N-Ras in biotic and defense responses. *Oncogene*. 26 - 6, pp. 917 - 933. 2007.

Type of production: Scientific paper**Format:** Journal**Position of signature:** 1**Total no. authors:** 4**Corresponding author:** No

- 10** Javier Gutiérrez Berzal; Esther Castellano Sanchez; Susana Martín Encabo; Noelia Gutiérrez Cianca; J Hernández; Eugenio Santos; Carmen Guerrero. Characterization of p87C3G, a novel, truncated C3G isoform interacting with BCR-ABL in chronic myeloid leucemia cell lines. *Experimental Cell Research*. 312, pp. 938 - 948. 2006.

Type of production: Scientific paper**Format:** Journal**Position of signature:** 2**Total no. authors:** 5**Corresponding author:** No

- 11** Agata Krygowska; Esther Castellano. PI3K: a crucial piece in the RAS signalling puzzle. Ras in cancer/human disease. in press, Cold Spring Harbor, 2017.

Type of production: Book chapter**Format:** Book**Position of signature:** 2**Total no. authors:** 2**Degree of contribution:** Author or co-author of chapter in book**Corresponding author:** Yes

- 12** Esther Castellano Sanchez; Julian Downward. Role of Ras in the regulation of PI 3-kinase. PI3K in health and disease. 346, pp. 143 - 169. *Curr Top Microbiol Immunol*, 2010.

Type of production: Book chapter**Format:** Book**Position of signature:** 1**Total no. authors:** 2**Corresponding author:** No

- 13** Cristina Cuesta; Cristina Arévalo Alameda; Esther Castellano Sánchez. The Importance of Being PI3K in the RAS Signaling Network. *Genes*. 12 - 7, pp. 1094. *MPDI*, 19/07/2021.

Type of production: Bibliographic review**Format:** Journal**Corresponding author:** Yes

- 14** Olga Soriano; Marta Alcón Pérez; Miguel Vicente Manzanares; Esther Castellano Sánchez. The Crossroads between RAS and RHO Signaling Pathways in Cellular Transformation, Motility and Contraction. *Genes*. 12 - 6, *MDPI*, 27/05/2021.

Type of production: Bibliographic review**Format:** Journal**Corresponding author:** Yes

- 15** Esther Castellano Sanchez; Eugenio Santos. Functional specificity of ras isoforms: so similar but so different. *Genes and Cancer*. 2 - 3, pp. 216 - 231. 2011.

Type of production: Bibliographic review**Format:** Journal**Position of signature:** 1**Total no. authors:** 2**Corresponding author:** No

- 16** Esther Castellano Sanchez. RAS Interaction with PI3K: More Than Just Another Effector Pathway. *Genes and Cancer*. 2 - 3, pp. 261 - 274. 2011.

Type of production: Bibliographic review**Format:** Journal**Position of signature:** 1**Total no. authors:** 2**Corresponding author:** No

Works submitted to national or international conferences

- 1** **Title of the work:** Understanding the role of RAS signalling in the tumour microenvironment of KRAS-driven lung cancer
Name of the conference: 43 Annual Meeting of the Spanish Society of Biochemistry and Molecular Biology
Corresponding author: No
City of event: Barcelona, Catalonia, Spain
Date of event: 19/07/2021
End date: 22/07/2021
Organising entity: SEBBM
Cristina Cuesta; Cristina Arévalo; Esther Castellano Sánchez.
- 2** **Title of the work:** Exploring the role of RAS signalling in the remodelling of the tumour microenvironment of KRAS-driven lung cancer
Name of the conference: The Third RAS Initiative Symposium
Corresponding author: No
City of event: Frederick, United States of America
Date of event: 24/05/2021
End date: 26/10/2021
Organising entity: NCI RAS Initiative
Cristina Cuesta; Cristina Arévalo; Esther Castellano Sánchez.
- 3** **Title of the work:** Ras Oncoproteins: druggable or undruggable?
Name of the conference: 2 ASEICA Educational symposium
City of event: Madrid, Community of Madrid, Spain
Date of event: 29/11/2019
Organising entity: ASEICA **Type of entity:** Associations and Groups
- 4** **Title of the work:** The many roles of RAS-PI3K interaction in lung cancer development
Name of the conference: Seminario
Corresponding author: Yes
City of event: Londres, Inner London, United Kingdom
Date of event: 23/02/2017
End date: 23/02/2017
Organising entity: Imperial University **Type of entity:** University
City organizing entity: Londres, Inner London, United Kingdom
Esther Castellano Sanchez.
- 5** **Title of the work:** The many roles of RAS-PI3K interaction in lung cancer development
Name of the conference: Seminario
Corresponding author: Yes
City of event: Toulouse, Midi-Pyrénées, France
Date of event: 09/12/2016
End date: 09/12/2016
Organising entity: Cancer Research Centre of Toulouse **Type of entity:** University Centres and Structures and Associated Bodies
City organizing entity: Toulouse, Midi-Pyrénées, France
Esther Castellano Sanchez.



- 6** **Title of the work:** RAS binding to PI3K regulates cell adhesion in non-small cell lung carcinoma
Name of the conference: CRUK lung cancer workshop
Corresponding author: Yes
City of event: York, North Yorkshire, United Kingdom
Date of event: 01/12/2016
End date: 02/12/2016
Organising entity: Cancer Research UK
City organizing entity: Londres, Inner London, United Kingdom
- 7** **Title of the work:** RAS-PI3K signaling regulates cells adhesion in lung cancer
Name of the conference: 28th UK cell adhesion society meeting
Corresponding author: Yes
City of event: Londres, Inner London, United Kingdom
Date of event: 22/09/2016
Organising entity: Cell Adhesion Society **Type of entity:** Foundation
City organizing entity: Londres, Inner London, United Kingdom
Miriam Molina Arcas; Agata Krygowska; Phil East; Clare Sheridan; Julian Downward; Esther Castellano Sanchez.
- 8** **Title of the work:** Understanding the role of Ras-PI3K signaling in lung tumour development
Name of the conference: Seminario
Corresponding author: Yes
City of event: Salamanca, Castile and León, Spain
Date of event: 23/06/2016
End date: 23/06/2016
Organising entity: Centro de Investigación del **Type of entity:** University Research Institute
Cáncer
City organizing entity: Salamanca, Castile and León, Spain
- 9** **Title of the work:** Role of Ras-PI3K signaling in macrophage function
Name of the conference: Immune Checkpoint Modulation & Combination Therapies Conference
Corresponding author: Yes
City of event: Londres, Inner London, United Kingdom
Date of event: 12/04/2016
End date: 14/04/2016
Organising entity: Pharma IQ **Type of entity:** Associations and Groups
City organizing entity: Londres, Inner London, United Kingdom
Agata Krygowska; Esther Castellano Sanchez.
- 10** **Title of the work:** RAS signalling through PI3-Kinase controls Reelin expression to regulate cell migration
Name of the conference: William Harvey Day
Corresponding author: Yes
City of event: Londres, Inner London, United Kingdom
Date of event: 22/10/2014
End date: 22/10/2014
Organising entity: Queen Mary University of London
City organizing entity: Londres, Inner London, United Kingdom
Esther Castellano Sanchez; Miriam Molina Arcas; Agata Krygowska; Phil East; Julian Downward.



- 11 Title of the work:** Understanding the role of Ras-PI3-Kinase signalling in lung cancer tumour associated macrophages recruitment
Name of the conference: PI3-Kinases in Immunity, Inflammation and Infection
Corresponding author: Yes
City of event: Cambridge, East Anglia, United Kingdom
Date of event: 23/06/2014
End date: 23/06/2014
Organising entity: The Brabham Institute
City organizing entity: Cambridge, East Anglia, United Kingdom
Julian Downward; Esther Castellano Sanchez.
- 12 Title of the work:** Genomic expression programs of cell lines carrying null mutations of the H-ras and N-ras genes
Name of the conference: CNIO meeting on DNA Arrays
Corresponding author: No
City of event: Madrid, Community of Madrid, Spain
Date of event: 09/05/2003
End date: 09/05/2003
Organising entity: Centro Nacional de Investigaciones Oncológicas
Type of entity: Healthcare Institutions
City organizing entity: Madrid, Community of Madrid, Spain
Esther Castellano Sanchez; Carmen Guerrero; Alberto Fernandez Medarde; Eugenio Santos.

R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

- 1 Committee title:** William Harvey Research Institute advisory panel
Primary (UNESCO code): 320101 - Cancerology
Affiliation entity: William Harvey Research Institute
Type of entity: University Centres and Structures and Associated Bodies
City affiliation entity: London, Inner London, United Kingdom
Start-End date: 05/2017 - 07/2017
- 2 Committee title:** MRC scientific advisory panel
Primary (UNESCO code): 320101 - Cancerology
Affiliation entity: Medical Research Cancer
City affiliation entity: Inner London, United Kingdom
Start-End date: 05/2017 - 06/2017
- 3 Committee title:** Rosetrees Trust advisory panel
Primary (UNESCO code): 320101 - Cancerology
Affiliation entity: Rosetrees Trust
Type of entity: Foundation
City affiliation entity: Londres, Inner London, United Kingdom
Start-End date: 04/2017 - 05/2017



Other achievements

Stays in public or private R&D centres

- 1** **Entity:** Barts Cancer Institute **Type of entity:** University Research Institute
Faculty, institute or centre: Centre for Cancer and Inflammation
City of entity: Londres, Inner London, United Kingdom
Start-End date: 10/2013 - 2017
Goals of the stay: Contracted
Provable tasks: Lecturer and Researcher
- 2** **Entity:** London Research Institute **Type of entity:** R&D Centre
City of entity: London, Inner London, United Kingdom
Start-End date: 06/2007 - 09/2013 **Duration:** 6 years - 4 months - 10 days
Goals of the stay: Post-doctoral
- 3** **Entity:** Centro de Investigación del Cáncer **Type of entity:** University Research Institute
Faculty, institute or centre: Centro de Investigación del Cancer
City of entity: Salamanca, Castile and León, Spain
Start-End date: 01/2002 - 06/2007 **Duration:** 5 years - 5 months
Goals of the stay: Doctorate
- 4** **Entity:** George Mason University **Type of entity:** University
City of entity: Fairfax, United States of America
Start-End date: 09/2005 - 12/2005 **Duration:** 4 months
Goals of the stay: Estancia breve
Provable tasks: Aprendizaje de tecnicas
- 5** **Entity:** National Institutes of Health **Type of entity:** Healthcare Institutions
Faculty, institute or centre: Food and Drug Administration
City of entity: Bethesda, United States of America
Start-End date: 08/2004 - 12/2004 **Duration:** 4 months
Goals of the stay: Estancia breve
Provable tasks: Aprendizaje de tecnicas
- 6** **Entity:** John Innes Institute **Type of entity:** R&D Centre
Faculty, institute or centre: John Innes Institute
City of entity: Norwich, Inner London, United Kingdom
Start-End date: 07/1999 - 12/1999 **Duration:** 6 months
Goals of the stay: Estudiante en practicas



Obtained grants and scholarships

Name of the grant: Beca de formación de profesorado

Aims: Pre-doctoral

Awarding entity: Ministerio de Ciencia e Innovación. **Type of entity:** NA Investigación

Conferral date: 2002

Duration: 4 years

End date: 2006

Entity where activity was carried out: Centro de Investigación del Cáncer

Faculty, institute or centre: Centre

Prizes, mentions and distinctions

- 1 Description:** Best Talk Award
Awarding entity: Cancer Research UK
City awarding entity: York, United Kingdom
Conferral date: 12/2016
- 2 Description:** Travel award
Awarding entity: Keystone Symposia
Conferral date: 04/2009
- 3 Description:** Postdoctoral grant
Awarding entity: Cancer Research UK **Type of entity:** Associations and Groups
City awarding entity: London, United Kingdom
Conferral date: 06/2007
- 4 Description:** short term training grant
Awarding entity: Ministerio de Educación y Ciencia
Conferral date: 09/2005
- 5 Description:** Short term training grant
Awarding entity: Ministerio de Educación y Ciencia
Conferral date: 08/2004
- 6 Description:** FPU predoctoral grant
Awarding entity: Ministerio de Educación y Ciencia
City awarding entity: Spain
Conferral date: 01/2003
- 7 Description:** Beca Leonardo
Awarding entity: Dirección General de Educación y Cultura de la Comisión Europea
Conferral date: 1999