***CURRICULUM VITAE ABREVIADO (CVA)***

**Part A. PERSONAL INFORMATION**

|  |  |
| --- | --- |
| First name  | Juan Carlos |
| Family name | Acosta Cobacho |  |  |
| Gender (\*) | Male | Birth date (dd/mm/yyyy) | 28/12/1973 |
| Social Security, Passport, ID number | ID:13166618S |  |  |
| e-mail | acostajc@unican.es | URL Web <https://web.unican.es/ibbtec/es-es/sobre-el-ibbtec/equipo/directorio/detalle-miembro?d=JuanCarlosAcostaLAB> |
| Open Researcher and Contributor ID (ORCID) (\*) | 0000-0002-7989-7329 |

*(\*) Mandatory*

**A.1. Current position**

|  |  |
| --- | --- |
| Position | Research Professor CSIC  |
| Initial date | 01/09/2021  |
| Institution | Spanish National Research Council (CSIC) |
| Department/Center | Cell signal. | Institute of Biomedicine and Biotechnology of Cantabria |
| Country | Spain  | Teleph. number |  +34 942 203937 |
| Key words | Cellular senescence, SASP, innate immune signalling, tumour suppression, cancer, cell biology, molecular biology.   |

**A.2. Previous positions (research activity interuptions, indicate total months)**

|  |  |
| --- | --- |
| Period | Position/Institution/Country/Interruption cause |
| 2013-2021 | Chancellor´s Fellow-Principal Investigator at the CRUK Edinburgh Centre, IGC, University of Edinburgh, UK. |
| 2010-2013 | Research Associate from Imperial College at the MRC-Laboratory of Medical Sciences, Imperial College London (UK) |
| 2006-2009 | Postdoctoral MRC-Career Development Fellow at the MRC-Laboratory of Medical Sciences, Imperial College, London (UK) |
| 2000-2005 | PhD student in the Department of Molecular Biology at the University of Cantabria, Santander (Spain) |
| 1998-2000 | Research assistant in the Department of Molecular Biology at the University of Cantabria, Santander (Spain). |

**A.3. Education**

|  |  |  |
| --- | --- | --- |
| PhD, Licensed, Graduate | University/Country | Year |
| PhD in Molecular Biology | Universidad de Cantabria | 2005  |
|  BS in pharmacology (mPharm) | Universidad de Salamanca | 1998  |

(Include all the necessary rows)

**Part B. CV SUMMARY** *(max. 5000 characters, including spaces)*

Dr Juan Carlos Acosta Cobacho obtained his degree in Pharmacology (mPharm) at the University of Salamanca in 1998, and his PhD in Molecular Biology at the University of Cantabria in 2005. After that, he moved to the UK for a postdoctoral training at the MRC-Clinical Science Centre in London, where he researched the mechanisms of senescence-induced tumour suppression upon oncogenic activation. In that period, he published three ground-breaking publications as the first author in top journals and was supported by an MRC-Career Development Fellowship and an Imperial College Research Associate contract. He was the first to report in *Cell* that senescent cells activate a proinflammatory secretome, the Senescence-Associated Secretory Phenotype or SASP, critical for the initiation and maintenance of the senescence phenotype (PMID: 18555777). He also reported in *Nature Cell Biology* that cellular senescence can be transmitted to normal cells through the SASP (PMID: 23770676). These two publications have revolutionized the field of cellular senescence by explaining the disruptive proinflammatory effect of these cells in tissues, and since then the SASP has been a primary focus of the field. Both publications accumulate more than 1800 citations to date. He also published in *Genes and Development* the role of the histone demethylase JMJD3 in p16INK4a-ARF (CDKN2A) epigenetic control, with over 350 citations (PMID: 19451218). After his postdoctoral research, Dr Acosta established his independent research group at the MRC-Institute of Genetics and Molecular Medicine (today´s IGC) at the University of Edinburgh, where he was awarded a University of Edinburgh Chancellor's Fellowship (£600K) and a prestigious and highly competitive CRUK Career Development Fellowship (£1.6 mill). He obtained tenure at the University of Edinburgh in December 2019. In that period, Dr Acosta´s laboratory continued producing impactful articles, including three as corresponding author. Work from his group reported in *Science Advances* that TLR2 and its ligands SAA1 and SAA2 (A-SAA) are an essential component of oncogene-induced senescence and the SASP. In collaboration with the group of Prof Wendy Bickmore, they reported in *Genes and Development* a role for nuclear pores in the three-dimensional organization of the heterochromatin in senescence, and in collaboration with the group of Dr Andrew Finch, they published in *Aging Cell* that cellular senescence is induced by ribosome biogenesis deficiency is linked to endoplasmic reticulum stress and cholesterol synthesis. In November 2020, Dr Acosta obtained a Full Professor Tenure from the Spanish National Research Council (CSIC) at the IBBTEC in Santander, Spain, and moved his group there in September 2021. He was awarded with his first Research Grant from the Spanish Ministry of Science (Plan Estatal, AEI). Since his establishment in Spain, his group has reported in *Cell Death and Differentiation* that bacterial sensing by non-canonical inflammasome mediates cellular senescence, in *Cell Reports* a critical role for TLR2 as a potent tumour suppressor gene in lung cancer, and in *Nature Communications* the discovery of three new senolytics using Artificial Intelligence generated models. Dr Acosta has supervised four awarded PhDs, three of them are the first authors in impactful publications. All PhD students have continued their science careers successfully in industry, in academic research as postdocs or as clinical lecturers. Dr Acosta has taught about tumour suppressor genes at the Cancer Biology and Medicine course at the University of Edinburgh and in the Master’s program from University of Cantabria and the UPV. He is associate editor for the journal *Cancer Medicine* from Wiley Publishing and is a reviewer for top journals such as *Nature Cell Biology*, *Nature Communications*, *Nature Aging,* *Molecular Cell*, *Cell Reports*, *Elife, Aging Cell*, and *The EMBO journal* andfor funding bodies such as CRUK, MRC, BBSRC, ERC, La Caixa Foundation, AECC and the AEI amongst others. He has also participated in funding evaluation committees for the Spanish Research Agency (AEI) for the *Juan de la Cierva* program (2020) and *Proyectos Generacion de Conocimiento* (2021, 2022). Dr Acosta is a frequent invited speaker in national and international conferences in the field of molecular and cellular biology cellular senescence and cancer such as ICSA, ESLHO, SEBM and SEBCell, and in top scientific institutions. Dr Acosta has a track record of 44 publications, 35 original research articles, 3 Book Chapters and 6 Reviews. He is principal author in 20 publications, 12 of such publications as the first Author, 8 as the corresponding author, and 9 of them in D1 journals. The total number of citations is over 7000. His H-Index is 26.

**Part C. RELEVANT MERITS** *(sorted by typology)*

**C.1. Publications** *(Selected)* (Corresponding author: AC)

1. Bartlett BM, … Acosta JC (AC), Bickmore WA (AC). (2024) TPR is required for cytoplasmic chromatin fragment formation during senescence. ***bioRxiv***. 2024.04.18.590085; doi: 10.1101/2024.04.18.590085. Accepted in ***eLife***
2. Smer-Barreto V (AC), Quintanilla A, Elliott RJR,…, Acosta JC (AC), Oyarzún DA (AC) (10/11). (2023) Discovery of senolytics using machine learning. ***Nat Commun.*** Jun 10;14(1):3445. doi: 10.1038/s41467-023-39120-1. PMID: 37301862; PMCID: PMC10257182.
3. Millar FR, Pennycuick A, Muir M, … Acosta JC (AC), (18/18). (2022) Toll-like receptor 2 orchestrates a tumor suppressor response in non-small cell lung cancer. ***Cell Rep.*** Nov 8;41(6):111596. doi: 10.1016/j.celrep.2022.111596. PMID: 36351380; PMCID: PMC10197427.
4. Fernández-Duran I, Quintanilla A, Tarrats N, … Acosta JC (AC). (12/12). (2022) Cytoplasmic innate immune sensing by the caspase-4 non-canonical inflammasome promotes cellular senescence. ***Cell Death Differ***. doi: 10.1038/s41418-021-00917-6. PMID: 34916628.
5. Hari P, Millar FR, Tarrats N, … Acosta JC (AC), (14/14). (2019) The innate immune sensor Toll-like receptor 2 controls the senescence-associated secretory phenotype. ***Sci Adv*.** Jun 5;5(6):eaaw0254. doi: 10.1126/sciadv.aaw0254. PMID: 31183403; PMCID: PMC6551188.
6. Pantazi A, Quintanilla A, Hari P, … Acosta JC (AC), Finch AJ (AC), (9/10). (2019) Inhibition of the 60S ribosome biogenesis GTPase LSG1 causes endoplasmic reticular disruption and cellular senescence. ***Aging Cell****.* Aug;18(4):e12981. doi: 10.1111/acel.12981. Epub 2019 May 31. PMID: 31148378; PMCID: PMC6612703.
7. Boumendil C, Hari P, Olsen K, Acosta JC (AC), Bickmore WA (AC), (4/5). (2019) Nuclear pore density controls heterochromatin reorganization during senescence. ***Genes Dev****.* Feb 1;33(3-4):144-149. doi: 10.1101/gad.321117.118. Epub 2019 Jan 28. PMID: 30692205; PMCID: PMC6362808.
8. Acosta JC, … Gil J. A complex secretory program orchestrated by the inflammasome controls paracrine senescence. ***Nat Cell Biol***. 2013 Aug;15(8):978-90. doi: 10.1038/ncb2784. Epub 2013 Jun 16. PMID: 23770676; PMCID: PMC3732483.
9. Barradas M\*, Anderton E\*, Acosta JC\*, … Gil J. Histone demethylase JMJD3 contributes to epigenetic control of INK4a/ARF by oncogenic RAS. ***Genes Dev***. 2009 May 15;23(10):1177-82. doi: 10.1101/gad.511109. PMID: 19451218; PMCID: PMC2685533. \*Equal contribution
10. Acosta JC, … Gil J. Chemokine signaling via the CXCR2 receptor reinforces senescence. ***Cell***. 2008 Jun 13;133(6):1006-18. doi: 10.1016/j.cell.2008.03.038. PMID: 18555777.
11. Ogrodnik M, Acosta JC, … Demaria M. Guidelines for minimal information on cellular senescence experimentation in vivo. ***Cell***. 2024 Aug 8;187(16):4150-4175. doi: 10.1016/j.cell.2024.05.059. PMID: 39121846.
12. Ferreira-Gonzalez S, Man TY, Esser H, … Forbes SJ (AC), (19/25). (2022) Senolytic treatment preserves biliary regenerative capacity lost through cellular senescence during cold storage. ***Sci Transl Med.*** Dec 7;14(674):eabj4375. doi: 10.1126/scitranslmed.abj4375. Epub 2022 Dec 7. PMID: 36475903.
13. Altea-Manzano P, Vandekeere A, Edwards-Hicks J, …. Finch AJ (AC), (12/16). (2022) Reversal of mitochondrial malate dehydrogenase 2 enables anaplerosis via redox rescue in respiration-deficient cells. ***Mol Cell*** Dec 1;82(23):4537-4547.e7. doi: 10.1016/j.molcel.2022.10.005. Epub 2022 Nov 2. PMID: 36327975
14. Edwards-Hicks J, Su H, Mangolini M, … Finch AJ (AC), (27/33). (2022) MYC sensitises cells to apoptosis by driving energetic demand. ***Nat Commun.*** Aug 9;13(1):4674. doi: 10.1038/s41467-022-32368-z. PMID: 35945217; PMCID: PMC9363429.
15. Younger NT, Wilson ML, Martinez Lyons A, … Boulter L, (13/18). (2022) In vivo modeling of patient genetic heterogeneity identifies new ways to target cholangiocarcinoma. ***Cancer Res.*** *82*(8), 1548–1559. https://doi.org/10.1158/0008-5472.CAN-21-2556 PMID: 35074757
16. Reijns MAM, Thompson L, Acosta JC, … Jackson AP. (3/38) (2020) A sensitive and affordable multiplex RT-qPCR assay for SARS-CoV-2 detection. ***PLoS Biol.*** Dec 15;18(12):e3001030. doi: 10.1371/journal.pbio.3001030. eCollection 2020 Dec. PMID: 33320856 PMCID: PMC7771873.
17. García-Gutiérrez L, … León J. (6/13) (2019) Myc stimulates cell cycle progression through the activation of Cdk1 and phosphorylation of p27. ***Sci Rep.*** Dec 10;9(1):18693. doi: 10.1038/s41598-019-54917-1. PMID: 31822694
18. Teo YV, … Chandra T (AC), (11/15). (2019) Notch Signaling Mediates Secondary Senescence. ***Cell Rep.*** Apr 23;27(4):997-1007.e5. doi: 10.1016/j.celrep.2019.03.104. PMID: 31018144; PMCID: PMC6486482.
19. Rodriguez J, … von Kriegsheim A (AC), (8/11). (2018) PHD3 Regulates p53 Protein Stability by Hydroxylating Proline 359. ***Cell Rep.*** Jul 31;24(5):1316-1329. doi: 10.1016/j.celrep.2018.06.108. PMID: 30067985; PMCID: PMC6088137.
20. Ferreira-Gonzalez S, … Forbes SJ (AC), (12/14). (2018) Paracrine cellular senescence exacerbates biliary injury and impairs regeneration. ***Nat Commun.*** Mar 9;9(1):1020. doi: 10.1038/s41467-018-03299-5. PMID: 29523787; PMCID: PMC5844882.
21. Young HL, … Hurlstone A (AC) (7/18). An adaptive signaling network in melanoma inflammatory niches confers tolerance to MAPK signaling inhibition*.* ***J Exp Med.*** 2017 Jun 5;214(6):1691-1710.

**C.2. Conferences,** indicating the modality of their participation (invited conference, oral presentation, poster).

1. Invited speaker at the Spanish Society of Cell Biology (SEBCell) Congress in Cordoba on the 13th to 15th of November 2023.
2. Invited speaker at Wiggers-Bernard Conference - Senescence in vivo and the MICSE Workshop on the 14th to 16th of June 2023.
3. Invited speaker at 44-congress of SEBBM in Malaga, 6-9 September 2021.
4. Keynote speaker at yICSA meeting in London, April 2022.
5. Invited speaker at the 10th ESLHO Symposium: Monitoring immunotherapies: Basis for Companion Diagnostics? In Leiden, The Netherlands. 11‐12 November 2021.
6. Invited speaker at the International Cellular Senescence Association (ICSA) Conference at the Pasteur Institute. Paris, France in 2017.
7. Invited speaker at the International Cellular Senescence Association (ICSA) Conference Santiago de Compostela in 2015.
8. Keynote speaker at the Senescence UK 2016 meeting. Cambridge, 1st of December 2016.
9. Invited speaker at the International Cellular Senescence Association (ICSA) Conference. Santiago de Compostela, Spain. 19th to 22nd of July 2015.
10. Invited lecture and speaker at the Frontiers in Genomics Program. Center for Genomic Sciences (CCG), the Institute of Biotechnology (IBT) of UNAM, Cuernavaca, Mexico .18th- 19th May 2015.

**C.3. Research funding**, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

1. **Research Project: Proyecto Generación de conocimiento AEI, principal Investigator:** **PID2023-146497OB-I00.** **Plan Estatal de Investigación MCIN/AEI**. PI, Juan C Acosta.Sept 2024-August 2027. Budget: € 387,500.00.
2. **Research award: 2024AEP110. Ayudas extraordinarias para la preparación de proyectos 2024, CSIC.** PI, Juan C Acosta.Esta ayuda está relacionada con el proyecto PID2020-117860GB-I00. CSIC. 01/09/2024-30/11/2024. Budget: €20,000.
3. **Research Project: Proyecto Generación de conocimiento AEI, principal Investigator: PID2020-117860GB-I00, Plan Estatal de Investigación MCIN/AEI.** PI Juan C Acosta. 1st September 2021 – 31st August 2024. Budget €290,400.
4. **Infrastructure Project: UE-Next Generation for purchasing a HCA microscopy platform, researcher: EQC2021-007165-P. Proyecto EQC2021-007165-P financiado por MCIN/AEI y la Union Europea "NextGenerationEU"/PRTR.**. Period: 01/06/2021- 31/12/2023. Budget: 498,500.00 €. Role: Researcher. PI, Ignacio Varela
5. **Research Project: Welcome-Trust / University of Edinburgh grant, principal investigator: IS3-R1.07 20/21 WT-ISS3.** PI Juan C Acosta. 1st March 2021 – 31st January 2022. Butget: £30,000.
6. **Research Project: R45268 ECAT/Wellcome Trust PhD Fellowship, Principal Investigator-supervisor:** Project Lead Fraser Millar**.** PIJuan C Acosta. 1st Feb 2018 to Oct 2021. Budget: £231,493.
7. **Research Fellowship: CRUK research fellowship, principal investigator: C47559/A16243 Training & Career Development Board - Career Development Fellowship (CRUK).** PI Juan C Acosta. 01-Dec-2013 to 31-Sept-2021. Budget: £1,629,667.
8. **Research Fellowship: University of Edinburgh Research Fellowship, principal Investigator: R42576 MRC - Chancellors Fellowship**. PI Juan C Acosta. Period: 01-Jan-2013 to 31-Dec 2017. Budget: £611,221.
9. **Research Project: Welcome-Trust / University of Edibburgh grant, principal investigator: J22735 WT-ISSF**. PI Juan C Acosta. Period: 01-April-2013 to 30-Sept-2013. Budget: £20,000.

**C.4. Contracts, technological or transfer merits**, N/A

**C.5. Supervised PhDs:**

1. PhD: Flora Lucy *Dix*. Title: *Ceramide synthase 4: a novel metabolic regulator of oncogene-induced senescence.* Year of award:2018
2. PhD: Priya Hari. Title: *The identification and study of a role for Toll-like receptors in oncogene-induced senescence.* Year of award:2018
3. PhD: Irene Fernandez-Duran. Title: *Investigating the role of the non-canonical inflammasome in senescence.* Year of award:2019
4. PhD: Fraser R Millar. Title: *Toll-like receptor 2 orchestrates a novel tumour suppressor response in non-small cell lung cancer*. Year of award: 2021.

**C.6. Participation in funding evaluation committees:**

From the Spanish Research Agency (AEI): Juan de la Cierva incorporación 2020. Proyectos del Plan Estatal de Investigación 2021 and 2022.

AECC TALENT 2024.

CRUK Early detection pannel 2024.

**C.7. Funding peer-review:**

Barts Charity since 2019

Heart Research UK since 2019

Worldwide Cancer Research since 2017.

Fundación La Caixa since 2016.

MRC (Medical Research Council, UK Government) since 2014.

BBSRC (Biotechnology and Biological Sciences Research Council, UK Government) since 2014.

Cancer Research UK since 2014.

AEI (Spanish Research Agency, Spanish Government) since 2013.

ERC (European Research Council) since 2016.

**C.9. Academic peer-review:**

Associated editor of Cancer Medicine (Wiley publishing) since 2022.

Reviewer for high impact journals such as Nature Cell Biology, Nature Communications, Nature Aging, Molecular Cell, Cell Reports, Elife, EMBO journal, Aging Cell, Mol Cancer, JCB amongst others.