

Esther Baena, Ph.D.

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RESEARCH INTEREST

It is my long-term goal to advance our mechanistic understanding of how normal cells transform into cancer cells by identifying and studying tumour-initiating cells in prostate cancer. With this approach, I seek to prevent the initiation of aggressive tumours and develop better and more personalized therapeutics. For this purpose, my laboratory employs *in vivo* disease models together with *ex vivo* 3D cultures derived from human samples to identify and determine the role of prostate stem-like progenitors in prostate cancer progression and their interactions with niche components.

EDUCATION

- 2006 **Ph.D. Molecular Biology**, “*Study of c-myc function in vivo*”
Supervisor: Dr. Ignacio Moreno de Alborán, Tutor: Dr. Carlos Martinez-A
University Autonoma of Madrid/National Center of Biotechnology, Spain
Dissertation: *Magna cum laude*
- 1999 **BS. Biology**, University of Seville, Spain.

SCIENTIFIC TRAINING/CAREER

- Since 06/2014 **Principal Investigator**
Prostate Oncobiology group. Cancer Research UK Manchester Institute, The University of Manchester.
- 2011-2014 **Research Fellow**
Children’s Hospital Boston/Harvard Cancer Center. Mentor: Stuart H. Orkin, M.D.
- 2009-2011 **DOD Research Trainee**
Prostate Cancer Research Program, US Department of Defense (DOD)
Harvard Medical School. Mentor: Stuart H. Orkin, M.D.
- 2007-2009 **Postdoctoral Fellow**
Children’s Hospital Boston/Harvard Cancer Center. Advisor: Stuart H. Orkin, M.D.
Project: Molecular mechanisms of prostate cancer cells through the use of genome-wide studies, and validation using preclinical mouse model.
- 2000-2006 **Graduate student**, Immunology and Oncology group.
National Center for Biotechnology (CNB/CSIC), Madrid, Spain.
Supervisor: Dr Ignacio Moreno de Alborán, Tutor: Dr Carlos Martinez-A
Project: Characterization of the role of *c-Myc* in liver development and hematopoiesis.
- 1999-2000 **Research assistant**, Vegetal proteins group.
Fat Institute, Seville, Spain.
Supervisor: Francisco Millán Rodríguez, Ph.D.
- 1997-1999 **Research assistant**, Animal Biology and Physiology
School of Biology, University of Seville, Spain.
Supervisors: Blas Torres Ruiz, Ph.D. and Rosario Pásaro, Ph.D.

HONORS AND AWARDS

2016	Pezcoller-Begnudelli Prize, 28 th Pezcoller Symposium
2014	CRUK Manchester Institute Junior Group Leader Award
2013	AACR-Prostate Cancer Foundation Scholar-in-Training-Award
2012	AACR-Bristol-Myers Squibb Oncology Scholar-in-Training-Award
2009-2011	Training Award, Prostate Cancer Research Program, US Department of Defense
2007-2009	Post-doctoral Fellowship, Science Ministry of Spain
2004-2006	Ph.D. Fellowship, Spanish Council for Scientific Research (CSIC)
2002	F.E.B.S. International Summer School on Immunology fellowship
2000- 2004	Ph.D. Fellowship, Education Ministry of Spain
1999-2000	Research assistant Fellowship, Industry Ministry of Spain.

ACADEMIC LEADERSHIP ROLES

- Founder of the Annual International UK-Mediterranean Prostate Cancer (UMPCa) Retreat (Inaugural meeting 2018)
- Founder of the Manchester Prostate Cancer Network (Prostate Club) (Inaugural meeting 2015)
- Member of the International Alliance for Cancer Early Detection (ACED) Prostate Cancer working group

TEACHING ACTIVITIES

02/21-present	Leadership in Education and Awards Programme (LEAP) at the University of Manchester
2014-present	Mentor International Mentoring Program (IMFAHE). Graduate program in biomedicine (Students: 13 completed). Harvard Medical School-Spanish Universities Platform, Boston, USA.
2012-2013	Teaching instructor Nanocourse: Hallmarks of Cancer Biology (CB399). Reading course. Graduate program of cancer biology. Harvard Medical School, Boston, USA.
2011-2012	Teaching instructor Nanocourse: Hallmarks of Cancer Biology (CB399). Reading course. Graduate program of cancer biology. Harvard Medical School, Boston, USA.
1997-1999	Teaching assistant Animal Biology and Physiology Dept., School of Biological Sciences. Univ. of Seville, Spain. Supervisor: Rosario Pásaro, Ph.D.

MEMBERSHIPS

Since 2020	International Cancer Genome Consortium (ICGC). Prostate committee member
Since 2015	European Society for Medical Oncology (ESMO). Scientific committee member
Since 2014	European Association for Cancer Research (EACR). Associate Member
Since 2011	American Association for Cancer Research (AACR). Associate Member
Since 2009	International Society for Stem Cell Research (ISSCR). Associate Member
Since 2002	Spanish Society Biochemistry and Molecular Biology (SEBBM). Associate Member

PUBLICATIONS (Peer-reviewed)

1. Ali A and **Baena E**
The needle in the haystack: The presence of castrate-resistant prostate cancer cells in hormone-naïve prostate cancer.
European Urology 2022, 81(2): 456-457
2. Ali A, Du Feu A, Oliveira P, Choudhury A, Bristow RG and **Baena E**
Prostate zones and cancer: Lost in transition.
Nature Reviews Urology 2022; 2: 101-115
3. Flores-Téllez Teresita DNJ and **Baena E**
Experimental challenges to modeling prostate cancer heterogeneity
Cancer Letters 2022; 524: 194-205
4. Finch AJ and **Baena E**
Spatiofunctional dynamics of NKX3.1 to safeguard the prostate from cancer
Cancer Discovery 2021; 11:2132-4
5. Mevel R, Steiner I, Mason S, Galbraith LCA, Patel R, Fadlullah MZH, Ahmad I, Leung HY, Oliveira P, Blyth K, **Baena E**, and Lacaud G.
RUNX1 marks a luminal castration resistant lineage established at the onset of prostate development.
eLife 2020; 9: e60225
6. Murphy R, Roddy AC, Srivastava S, **Baena E**, Waugh DJ, O'Sullivan J, McArt DG, Jain S and LaBonte MJ.
Prostate cancer heterogeneity assessment with multi-regional sampling and alignment-free methods.
NAR Genom Bioinform 2020; 2(3): 133-7.
7. Lie-A-Ling M, Mevel R, Patel R, Blyth K, **Baena E**, Kouskoff V, Lacaud G.
RUNX1 dosage in development and cancer.
Mol Cells 2020, 43 (2): 126-138
8. Parry MA, Srivastava S, Ali A, Cannistraci A, Antonello J, Barros-Silva J, Ubertini V, Ramani V, Lau M, Shank J, Nonak D, Oliveira P, Hambrock T, Leong HS, Dhomen N, Miller C, Brady G, Dive C, Clarke NW, Marais R, and **Baena E**.
Genomic evaluation of Multiparametric Magnetic Resonance Imaging-visible and -nonvisible Lesions in clinically localized prostate cancer.
European Urology Oncology 2019, 2(1):1-11.
9. Barros-Silva J, Linn DE, Steiner I, Guo G, Ali A, Pakula H, Ashton G, Peset I, Brown M, Clarke NW, Bronson R, Yuan GC, Orkin SH, Li Z and **Baena E**.
Single cell analysis identifies LY6D as a novel marker linking castration-resistant prostate luminal cells to prostate progenitors and cancer.
Cell Reports 2018, 25(12): 3504-3518.
10. Wang P, Dreger M, Madrazo E, Williams CJ, Samaniego R, Hodson NW, Monroy F, **Baena E**, Sánchez-Mateos P, Hurlstone A and Redondo-Muñoz J.
WDR5 modulates cell motility and morphology and controls nuclear changes induced by a 3D environment.
Proc Natl Acad Sci U S A 2018, 115 (34): 8581-8586.
11. Lessard S, Gatof ES, Beaudoin M, Schupp PG, Sher F, Ali A, Prehar S, Kurita R, Nakamura Y, **Baena E**, Ledoux J, Oceandy D, Bauer DE, Lettre G.
An erythroid-specific ATP2B4 enhancer mediates red blood cell hydration and malaria susceptibility.
J Clin Invest 2017, 127 (8):3065-3074.
12. Ali A, Hoyle A, **Baena E** and Clarke NW.
Identification and evaluation of clinically significant prostate cancer: A step towards personalized diagnosis.
Current Opinion of Urology 2017, 27(3):217-224.

13. **Baena E**, Shao Z, Linn DE, Glass K, Hamblen MJ, Fujiwara Y, Kim J, Nguyen M, Zhang X, Godinho FJ, Bronson RT, Mucci LA, Loda M, Yuan GC, Orkin SH, Li Z.
ETV1 directs androgen metabolism and confers aggressive prostate cancer in targeted mice and patients.
Genes & Development 2013, 27(6):683-98.
14. Vallespinós M, Fernández D, Rodríguez L, Alvaro-Blanco J, **Baena E**, Ortiz M, Dukovska D, Martínez D, Rojas A, Campanero MR, de Alborán IM.
B Lymphocyte commitment program is driven by the proto-oncogene c-Myc.
J Immunol 2011, 15;186(12): 6726-36.
15. **Baena E**, Ortiz M, Martínez-A C, de Alborán IM.
c-Myc is essential for hematopoietic stem cell differentiation and regulates Lin(-)Sca-1(+)-c-Kit(-) cell generation through p21.
Experimental Hematology 2007, 35(9):1333-43.
16. **Baena E**, Gandarillas A, Vallespinós M, Zanet J, Bachs O, Redondo C, Fabregat I, Martinez-A C, de Alborán IM.
c-Myc regulates cell size and ploidy but is not essential for postnatal proliferation in liver.
Proc Natl Acad Sci U S A 2005, 102(20):7286-91.
17. de Alborán IM#, **Baena E**#, Martinez-A C.
c-Myc-deficient B lymphocytes are resistant to spontaneous and induced cell death.
Cell Death & Differentiation 2004, 11(1):61-8. #equal contribution

INVITED LECTURES/TALKS (Selection, last 5 years)

2021

- Prostate Cancer UK-Spotlight seminar series (UK-USA).
- UCL-Cancer Institute seminar series (UK).
- IBIS-Institute of Biomedicine seminar series (ES).

2020

- Cancer models symposium (Plenary speaker), Tissue Engineering and Regenerative Medicine International Society (TERMIS) conference, Manchester (UK). Postponed due to COVID-pandemia.
- Brady Urology Seminar Series, John Hopkins Medical School, Baltimore (USA).
- Nottingham University, Nottingham (UK)

2019

- Tumor Heterogeneity and clonal evolution conference, Madrid (ES).
- Belfast Queens' University, Belfast (UK).
- Institute for Molecular Medicine (FIMM), Helsinki (FI).
- Cancer Research Institute Salamanca, Salamanca (ES).
- CIBIO, University of Trento. Trento (IT).

2018

- CRUK Cambridge Institute Quantitative Biology series, Cambridge (UK).
- CRUK Fellows conference, York (UK).
- University of Wolverhampton, Wolverhampton (UK).
- FASEB Cancer Signalling conference, Steamboat, Colorado (US).

2017

- Mount Sinai Research Centre, New York (US).
- Karolinska Institute- Immuno-Oncology Department (SE).

2016

- Edinburgh Cancer Research Centre, Edinburgh (UK).
- Belfast Queens' University, Belfast (UK).
- Pezcoller Symposium, Trento (IT).

2015

- John Hopkins School of Medicine, Baltimore (US).
- Novartis Cancer Centre, Basel (CH).
- MnM Cancer Diagnosis and Therapy conference, London (UK).