

Simposio Internacional / *International Symposium:*

## Nuevas perspectivas en la investigación sobre el cáncer *New insights in cancer discovery*

Madrid, 26 y 27 de octubre de 2017 / *October 26-27, 2017*

### ALEJO EFEYAN

Group Leader. Spanish National Cancer Research Center (CNIO).

#### Education and Research Experience

Jan 2016 Group Leader. *Metabolism and Cell Signaling Lab*. Spanish National Cancer Research Center (CNIO). Madrid, Spain.

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Nov 2008 - Dec 2015 Postdoctoral Fellow in the David M Sabatini Lab. Whitehead Institute for Biomedical Research, Massachusetts Institute of Technology.

Oct 2003 - Nov 2008 Graduate Student under the supervision of Manuel Serrano in the Tumor Suppression Group at the Spanish National Cancer Research Center (CNIO), Madrid.

Nov 2007 PhD. Thesis Defense: Genetic Dissection of p53-Mediated Tumor Suppression. From cellular responses to therapeutic approaches. Outstanding *Cum Laude*. Autonomous University of Madrid.

Sep 2002 - Oct 2003 Graduate Student at the Epithelial Damage, Repair and Tissue Engineering Lab (PI: Jose Luis Jorcano), CIEMAT, Madrid.

Aug 1999 - Sep 2002 Undergraduate Student under the supervision of Alfredo Molinolo and Claudia Lanari at Hormonal Carcinogenesis Lab at the IBYME – CONICET, Buenos Aires.

Nov 2001 Degree: B.S. in Biological and Health Sciences at the University of Buenos Aires.

Undergraduate Thesis qualification 10/10. Average qualifications: 8.9/10.

#### Publications

##### a. Research articles

1. mTORC1-dependent AMD1 regulation sustains polyamine metabolism in prostate cancer.

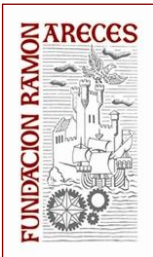
Zabala-Letona A *et al.* (*A. Carracedo Lab*) *Nature*. 2017 Germinal center selection and affinity maturation require dynamic regulation of mTORC1. Ersching J\*, **Efeyan A\***, Mesin L, Jacobsen JT, Pasqual G, Grabiner BC, Dominguez-Sola D, Sabatini DM, Vitorica GD. *Immunity*. 2017 (\*: equal contribution)

2. Indifference to amino acid-induced mTORC1 regulation enables hematopoietic stem cell resilience to nutritional stress. Kalaitzidis D, Lee D, **Efeyan A**, Kfoury Y, Nayyar N, Sykes DB, Mercier F, Papazian A, Baryawno N, Vitorica GD, Sabatini DM, Scadden DT. *J Clin Invest*. 2017

3. Recurrent mTORC1-activating RRAGC mutations in follicular lymphoma. Okosun J, et al. . (*J. Fitzgibbon Lab*) *Nat Genet*. 2016

4. RagA, but not RagB, is essential for embryonic development and adult life. **Efeyan A**, Schweitzer LD, Bilate AM, Chang S, Kirak O, Lamming DW, Sabatini DM. *Dev. Cell*. 2014

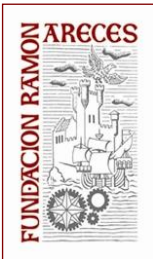
5. Regulation of mTORC1 by the Rag GTPases is necessary for neonatal autophagy and survival.



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- Efeyan A**, Zoncu R, Chang S, Gumper I, Snitkin H, Wolfson R, Kirak O, Sabatini DD, Sabatini DM. *Nature*. 2013
6. DEPTOR cell-autonomously promotes adipogenesis and associates with obesity. Laplante M, Horvat S, Festuccia WT, Birsoy K, Prevorsek Z, **Efeyan A**, Sabatini DM. *Cell Metab*. 2012
7. mTORC1 senses amino acids through a lysosomal inside-out mechanism that requires the Vacuolar H<sup>+</sup>-ATPase." Zoncu R, Bar-Peled L, **Efeyan A**, Wang S, Sancak Y, Sabatini DM. *Science*. 2011
8. Pten positively regulates brown adipose function, energy expenditure and longevity. Ortega-Molina A, **Efeyan A**, Muñoz-Martin M, Gomez G, Cañamero C, Mulero F, Pastor J, Martinez S, Valverde AM, Romanos E, Bischoff JR, Serrano M. *Cell Metab*. 2012
9. A minimally invasive assay for individual assessment of the ATM/CHEK2/p53 pathway activity. Kabacik S, Ortega-Molina A, **Efeyan A**, Finnon P, Bouffler S, Serrano M, Badie C. *Cell Cycle*. 2011
10. Limited evidence for the in vivo role of ATM in the response to oncogenic stress. **Efeyan A**<sup>\*</sup>, Murga M<sup>\*</sup>, Martinez-Pastor B, Ortega-Molina A, Soria R, Collado M, Fernandez-Capetillo O, Serrano M. *PLoS One*. 2009 (\*: equal contribution)
11. Induction of p53-dependent senescence by the MDM2 antagonist nutlin-3a in mouse cells of fibroblast origin. **Efeyan A**, Ortega-Molina A, Velasco-Miguel S, Herranz D, Vassilev LT, Serrano M. *Cancer Res*. 2007
12. Policing of oncogene activity by p53. **Efeyan A**, Garcia-Cao I, Herranz D, Velasco-Miguel S, Serrano M. *Nature*. 2006
13. Genetic dissection of the role of p21Cip1/Waf1 in p53-mediated tumour suppression. **Efeyan A**, Collado M, Velasco-Miguel S, Serrano M. *Oncogene*. 2007
14. A high-throughput loss-of-function screening identifies novel p53 regulators. Llanos S, **Efeyan A**, Monsech J, Dominguez O, Serrano M. *Cell Cycle*. 2006
15. Senescence in premalignant tumours. Collado M, Gil J, **Efeyan A**, Guerra C, Schuhmacher AJ, Barradas M, Benguria A, Zaballos A, Flores JM, Barbacid M, Beach D, Serrano M. *Nature*. 2005
16. Increased gene dosage of Ink4a/Arf results in cancer resistance and normal aging. Matheu A, Pantoja C, **Efeyan A**, Criado LM, Martin-Caballero J, Flores JM, Klatt P, Serrano M. *Genes Dev*. 2004
17. Isolation of a stromal cell line from an early passage of a mouse mammary tumor line: a model for stromal parenchymal interactions. Lamb CA, Fabris V, Gorostiaga M, Helguero LA, **Efeyan A**, Bottino MC, Simian M, Soldati R, Sanjuan N, Molinolo A, Lanari C. *J Cell Physiol*. 2005
18. Establishment of two hormone responsive mouse mammary carcinoma cell lines derived from a metastatic mammary tumor line. **Efeyan A**, Fabris V, Merani S, Lanari C, Molinolo A. *Breast Cancer Res Treat*. 2004
19. p21 and p27 in estrogen and anti-progestin-induced tumor regression of experimental mouse ductal carcinomas. Vanzulli S, **Efeyan A**, Benavides F, Helguero LA, Peters G, Shen J, Conti CJ, Lanari C, Molinolo A. *Carcinogenesis*. 2002



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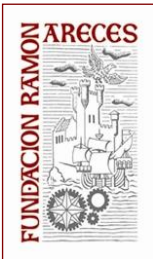
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b. Reviews and other articles

20. Nutrient-sensing mechanisms and pathways. **Efeyan A**, Comb WC, Sabatini DM. *Nature*. 2015
21. Nutrients and growth factors in mTORC1 activation. **Efeyan A**, Sabatini DM. *Bioch Soc Trans* 2013
22. Amino acids and mTORC1: from lysosomes to disease. **Efeyan A\***, Zoncu R\*, Sabatini DM. *Trends in Molecular Medicine*. 2012 (\*: equal contribution)
23. mTOR: from growth signal integration to cancer, diabetes and ageing. Zoncu R\*, **Efeyan A\*\$**, Sabatini DM\$. *Nat Rev Mol Cell Biol*. 2011 (\*: equal contribution; \$: corresponding authors)
24. mTOR and cancer: many loops in one pathway. **Efeyan A**, Sabatini DM. *Curr Opin Cell Biol*. 2010
25. p53: guardian of the genome and policeman of the oncogenes. **Efeyan A**, Serrano M. *Cell Cycle*. 2007

**Presentations and Seminars**

- Jun 2017 Hospital Universitario Clinic. Barcelona. Invited speaker for seminar.
- Mar 2017 Centre de Physiopathologie de Toulouse-Purpan (CPTP), Inserm. France. Invited speaker for seminar.
- Mar 2017 Castilla-La Mancha University. Invited Speaker for Seminar / Class.
- Mar 2017 Follicular Lymphoma North Berwick Workshop. North Berwick, Scotland. Invited Speaker.
- Mar 2017 Keystone Symposium Tumor Metabolism: Mechanisms and Targets. Whistler, BC. Short talk.
- Nov 2016 Institute of Biomedicine of Seville (IBIS). Sevilla, Spain. Invited speaker for seminar.
- Nov 2016 9th European Scientific Oncology Conference (ESOC). Marbella, Spain. Invited Speaker.
- Oct 2016 Center for Research in Molecular Medicine and Chronic Diseases (CIMUS). Santiago de Compostela, Spain. Invited speaker for seminar.
- Oct 2016 EMBO Conference. Translational Research in Cancer Cell Metabolism. Bilbao, Basque Country. Short talk & Session Chair.
- Sep 2016 CSHL Meeting *The PI3K-mTOR-PTEN Network in Health and Disease*. CSHL, NY. Short talk.
- Jun 2016 Center for Cooperative Research in Biosciences (CIC bioGUNE). Derio, Basque Country. Invited speaker for seminar.
- May 2016 IMDEA Food Institute. Madrid, Spain. Invited Speaker for seminar.
- Apr 2016 Institute of Functional Genomics and Biology (IBFG). Salamanca, Spain. Invited speaker for seminar.
- Feb 2013 *2013 HFSP Alumni Symposium*. Koch Institute, MIT. Cambridge, MA. Invited Speaker.
- Mar 2012 Instituto de Biología y Medicina Experimental (IBYME – CONICET). Buenos Aires, Argentina. Invited speaker for seminar.



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Mar 2008 Instituto de Parasitología Lopez-Neira. Granada, Spain. Invited Speaker.  
Oct 2007 Instituto de Biología y Medicina Experimental (IBYME – CONICET).  
Buenos Aires, Argentina. Invited speaker for seminar.  
May 2006 National Institute of Dental and Craniofacial Research (NIDCR – NIH).  
Bethesda, MD. Invited speaker for seminar.

**Supervision Experience (Students and Postdocs)**

Jan 2017 - 1 Bachelor Degree Student of Polytechnic University of Madrid.  
Jan 2017 - 1 MSc Student of Autonomous University of Madrid.  
2016 - 2 PhD Students of Autonomous University of Madrid.  
2016 - 1 Postdoctoral Researcher, Spanish National Cancer Research Center.  
Jan - Jun 2016 1 MSc Student of Tri-Institutional Master Program (UAM–UCM–UAH).

**Awards and Honors**

Nov 2007 Outstanding PhD Thesis Award on Molecular Biology from the UAM.  
Nov 2001 Eufemio Uballes Award from the Argentinean National Academy of Medicine.  
“Novel breast cancer cell lines with hormone receptors. The utility in the evaluation of therapeutic drugs.”

**Efeyan A**, Lanari C, Lamb C, Fabris V, Helguero L, Molinolo A.

**Research Support**

Feb 2017 Spanish Thematic Excellence Network. Role: PI - Coordinator. (€ 20000).  
Feb 2016 Spanish National Funding Agency (€140000 + 1 FPI PhD student fellowship).  
Nov 2014 European Research Council. Starting Grant (€1846493).  
July 2014 Selected in 1st position in Biomedicine for Spanish Ramón y Cajal Awards (€308600)