

Simposio Internacional / *International Symposium:*

Competición celular, apoptosis y cáncer
Cell competition, apoptosis and cancer

Madrid, 25 y 26 de octubre de 2016 / *October 25-26, 2016*

CV

EDUARDO MORENO



Education:

Biology degree: January 1998, Autonoma University (UAM), Madrid

PhD: July 2000 Centro de Biología Molecular Severo Ochoa, Madrid

Ph.D. Biology Advisor: Ginés Morata

Thesis: Caudal is the Hox gene that specifies the most posterior *Drosophila* segment.

Postdoctoral experience:

July 2000-October 2001: Centro de Biología Molecular Severo Ochoa, Madrid.

Postdoctoral scientist in the group of Ginés Morata

November 2001- January 2005: University of Zurich, Switzerland.

Postdoctoral scientist in the group of Konrad Basler

Principal Investigator: January 2005- December 2010, CNIO, Madrid, Group Leader.

January 2011- to date: IZB, University of Bern, Switzerland, Group Leader.

Awards:

2000: SEBBM Young Scientists Prize (Fisher Scientific Prize).

2000: Extraordinary Prize for best thesis Universidad Autónoma Madrid, 2000.

2002: Brupbacher Foundation Young Investigator Prize, Zurich, 2002.

2002: CBM-UAM PIMP prize, 2002.

2007: ERC Young Investigator Award.

2011: Josef Steiner Cancer Research Award.

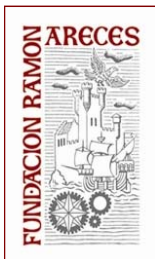
2012: ERC Proof of Concept Award.

2014: ERC Consolidator Grant Award.

List of main publications:

39. Merino MM, Levayer R, Moreno E. Survival of the Fittest: Essential Roles of Cell Competition in Development, Aging, and Cancer. *Trends Cell Biol.* 2016 Jun 16. pii: S0962-8924(16)30052-6. doi: 10.1016/j.tcb.2016.05.009.

38. Levayer R, Moreno E. How to be in a good shape? The influence of clone morphology on cell competition. *Commun Integr Biol.* 2016 Jan 5;9(1):e1102806. doi: 10.1080/19420889.2015.1102806. eCollection 2016 Jan-Feb. Review.



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PMID: 27066183

Times cited: 1

Altmetric score: 2

37. Levayer R, Dupont C, Moreno E. Tissue Crowding Induces Caspase-Dependent Competition for Space. *Curr Biol.* 2016 Feb 17. pii: S0960-9822(16)00059-2. doi: 10.1016/j.cub.2015.12.072. [Epub ahead of print]

PMID: 26898471

Times cited: 5

Altmetric score: 8

36. Gogna R, Shee K, Moreno E. Cell Competition During Growth and Regeneration. *Annu. Rev. Genet.* 2015 Nov 23;49:697-718. doi: 10.1146/annurev-genet-112414-055214. PubMed PMID: 26631518.

Times cited: 4

Altmetric score: 9

35. Casas-Tinto, S., Lolo, F. and Moreno E. Active JNK-dependent secretion of *Drosophila* Tyrosyl-tRNA synthetase by loser cells recruits haemocytes during cell competition. *Nat. Commun.* 6:10022 doi: 10.1038/ncomms10022 (2015).

Times cited: 3

Altmetric score: 12

34. Levayer, R., Hauert, B. and Moreno, E. Cell mixing induced by myc is required for competitive tissue invasion and destruction. *Nature.* 2015 Aug 27; 524(7566):476-480. doi: 10.1038/nature14684. Epub 2015 Aug 19.

PMID: 26287461

Times cited: 15

Altmetric score: 48

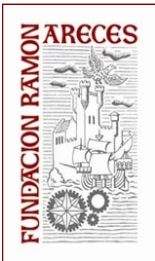
33. Moreno E., Fernandez-Marrero, Y., Meyer, P., and Rhiner, C. Brain regeneration in *Drosophila* involves comparison of neuronal fitness. *Curr Biol.* 2015 Mar 30;25(7):955-63. doi: 10.1016/j.cub.2015.02.014. Epub 2015 Mar 5.

PMID: 25754635

*Commentary in *Current Biology*.

Times cited: 7

Altmetric score: 7



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32. Merino MM, Rhiner C, Lopez-Gay JM, Buechel D, Hauert B, Moreno E. Elimination of unfit cells maintains tissue health and prolongs lifespan. *Cell*. 2015 Jan 29;160(3):461-76. doi: 10.1016/j.cell.2014.12.017. Epub 2015 Jan 15. PubMed PMID: 25601460.

*Commentaries in *Current Biology*, *Washington Post*, *Daily Mail*, *NZZ*, *LabTimes*, *WIRED*.
* Evaluated as "exceptional" in Faculty of 1000.

Times cited: 30

Altmetric score: 224

31. Moreno, E. and Rhiner, C. Darwin's multicellularity: From neurotrophic theories and cell competition to fitness fingerprints. *Current Opinion in Cell Biology*, 31, 16-22. 2014. Doi: 10.1016/j.ceb.2014.06.011.

Times cited: 12

Altmetric score: 5

30. Moreno E. Cancer: Darwinian tumour suppression. *Nature*. 2014 May 22;509(7501):435-6. doi: 10.1038/nature13337. Epub 2014 May 14. (News and Views).

Times cited: 7

Altmetric score: 8

29. Zhang C, Li G, Casas-Tintó S, Lin N, Chung M, Moreno E, Moberg K and Zhou L. An Intergenic Regulatory Region Mediates *Drosophila* Myc -Induced Apoptosis and Blocks Tissue Hyperplasia. *Oncogene*. 2014 Jun 16. doi: 10.1038/onc.2014.160.

Times cited: 4

Altmetric score: 1

28. K Gupta, E Madan, M Sayyid, H Arias-Pulido, E Moreno, P Kuppusamy, R Gogna. Oxygen regulates molecular mechanisms of cancer progression and metastasis. *Cancer and Metastasis Reviews*, Volume 33, Issue 1, pp 183-215. 2014.

Times cited: 4

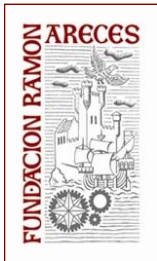
27. Merino MM, Rhiner C, Portela M, Moreno E. "Fitness fingerprints" mediate physiological culling of unwanted neurons in *Drosophila*. *Curr Biol*. 2013 Jul 22;23(14):1300-9. doi: 10.1016/j.cub.2013.05.053. Epub 2013 Jun 27.

Times cited: 19

Altmetric score: 13

*Commentary in *Current Biology*.

26. Fernandez-Hernandez, I., Rhiner, C., and Moreno, E. (2013). Adult Neurogenesis in *Drosophila*. *CELL reports*, Jun 27;3(6):1857-65. doi: 10.1016/j.celrep.2013.05.034. Epub 2013 Jun 20.



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Times cited: 20

Altmetric score: 20

* Evaluated as “exceptional” in Faculty of 1000.

25. Moreno E. The "Out of Africa Tribe" (II): Paleolithic warriors with big canoes and protective weapons. *Commun Integr Biol.* 2013 May 1;6(3):e24145. doi: 10.4161/cib.24145.

Times cited: 3

Altmetric score: 2

24. Lolo, F., Casas-Tinto S. and Moreno E. How winner cells cause the demise of loser cells. *Bioessays*, 2013 (AOP). DOI: 10.1002/bies.201200156

Times cited: 5

Altmetric score: 4

* Featured in Medfriendly.

23. Levayer, R. and Moreno, E. Mechanisms of cell competition: Themes and variations. *Journal of Cell Biology (JCB)*, 2013 Mar 18;200(6):689-98. doi: 10.1083/jcb.201301051.

Times cited: 63

Altmetric score: 4

22. Lolo, F., Casas-Tinto S. and Moreno E. Cell competition timeline: winners kill losers, which are extruded and engulfed by hemocytes. *CELL reports*, 2 (2012) pp. 526-539. DOI: 10.1016/j.celrep.2012.08.012.

Times cited: 40

Altmetric score: 31

21. Moreno E. Design and Construction of “Synthetic Species”. *PLoS ONE* (2012) 7(7): e39054. doi:10.1371/journal.pone.0039054.

Times cited: 10

Altmetric score: 109

* PlosOne editor’s choice in Plos blogs. Featured in LabTimes and Greenwire. Selected as one of the “100 discoveries of the year 2012” by “Quarks and Co”.

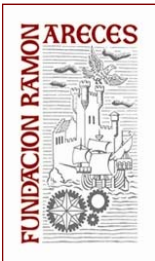
20. Petrova E, López-Gay JM, Rhiner C, Moreno E. Flower-deficient mice have reduced susceptibility to skin papilloma formation. *Dis Model Mech.* 2012

Jul;5(4):553-61.

Times Cited: 20

Altmetric score: 2

* Commentary in Disease Models and Mechanisms.



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19. Staal FJ et al. Stem cell self-renewal: lessons from bone marrow, gut and iPS toward clinical applications. *Leukemia*. 2011 Jul;25(7):1095-102. doi:10.1038/leu.2011.52. Epub 2011 Apr 29. Review. PubMed PMID: 21527933.

Times cited: 18

18. Petrova E, Soldini D and Moreno E. The expression of SPARC in human tumors is consistent with its role during cell competition. *Communicative and Integrative Biology*. Volume 4, Issue 2 March/April 2011, 171 - 174.

Times Cited: 13

17. Moreno E. The society of our “out of Africa” ancestors (I): The migrant warriors that colonized the world. *Communicative and Integrative Biology*. Vol. 4, Issue 2 March/April 2011 163 - 170.

Times Cited: 18 (including pre-print citations).

16. Casas-Tinto S, Torres M and Moreno E.
The “Flower Code” and Cancer Development.
Clin Transl Oncol. 2011 Jan;13(1):5-9.

Times cited: 3

15. Portela M, Casas-Tinto S, Rhiner C, López-Gay JM, Domínguez O, Soldini D, Moreno E.

Drosophila SPARC is a self-protective signal expressed by loser cells during cell competition. *DEV. CELL*. 2010. Vol. 19, Issue Issue 4, pp. 562-573.

Times Cited: 58

Altmetric score: 3

* Evaluated as “very good” in Faculty of 1000.

*Commentaries in *The Scientist* and *Nature Reviews Cancer*.

14. Rhiner C, López-Gay JM, Soldini D, Casas-Tinto S, Martín FA, Lombardía L, Moreno E.

Flower Forms an Extracellular Code that Reveals the Fitness of a Cell to its Neighbors in *Drosophila*. *DEV. CELL*. Vol. 18, Issue 6, 985-998, 2010.

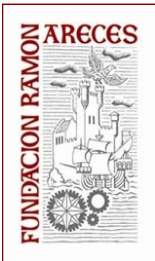
Times Cited: 74

Altmetric score: 8

* Evaluated as “very good” in Faculty of 1000.

*Commentaries in *Nature Reviews Genetics and Developmental Cell*.

13. Rhiner C, Moreno E.



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Super competition as a possible mechanism to pioneer pre-cancerous fields.
CARCINOGENESIS. 2009 Jan 6. 30(5): 723-728.
Times Cited: 38

12. Ziv O, Suissa Y, Neuman H, Dinur T, Geuking P, Rhiner C, Portela M, Lolo F, Moreno E*, and Gerlitz O*.

The co-regulator dNAB interacts with Brinker to eliminate cells with reduced Dpp signalling. DEVELOPMENT. 2009. 136: 1137-1145.

* Co-corresponding authors.

Times Cited: 16

11. Rhiner C, Díaz B, Portela M, Poyatos JF, Fernández-Ruiz I, López-Gay JM, Gerlitz O, Moreno E.

Persistent competition among stem cells and their daughters in the Drosophila ovary germline niche. DEVELOPMENT. 2009. 136: 995-1006

Times Cited: 56

Altmetric score: 2

* Evaluated as “very good” in Faculty of 1000.

10. Soldini D*, Moreno E*, Martin V, Gratwohl A, Marone C, Mazzucchelli L.

BM-derived cells randomly contribute to neoplastic and non-neoplastic epithelial tissues at low rates. BONE MARROW TRANSPLANT. 2008 Dec;42(11):749-55.

Times Cited: 5

* Equal contribution.

9. Gerlitz O, Wagner EF, Moreno E.

When flies and mice develop cancer. Meeting on development and cancer. EMBO Rep. 2008 Aug;9(8):730-734.

8. Moreno E.

Is cell competition relevant to cancer? NAT REV CANCER. FEB; 8(2):141-7, 2008.

Times Cited: 112

Altmetric score: 6

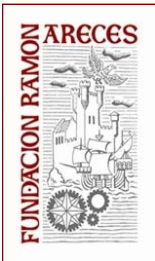
7. Diaz B, Moreno E

The competitive nature of cells. EXPERIMENTAL CELL RESEARCH.

306 (2): 317-322 JUN 10, 2005.

Times Cited: 49

6. Martin FA, Perez-Garijo A, Moreno E, Morata G.



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The brinker gradient controls wing growth in *Drosophila*
DEVELOPMENT 131 (20): 4921-4930 OCT, 2004.
Times Cited: 74

5. Moreno E, Basler K
dMyc transforms cells into super-competitors
CELL 117 (1): 117-129 APR 2, 2004.
Times Cited: 337
Altmetric score: 1
* Evaluated as “exceptional” in Faculty of 1000.

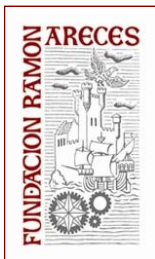
4. Moreno E, Yan MH, Basler K
Evolution of TNF signaling mechanisms: JNK-dependent apoptosis triggered by Eiger, the
Drosophila homolog of the TNF superfamily
CURRENT BIOLOGY 12 (14): 1263-1268 JUL 23, 2002.
Times Cited: 232
Altmetric score: 2
* Evaluated as “very good” in Faculty of 1000.

3. Moreno E, Basler K, Morata G
Cells compete for Decapentaplegic survival factor to prevent apoptosis in *Drosophila* wing
development
NATURE 416 (6882): 755-759 APR 18, 2002.
Times Cited: 265
Altmetric score: 1
Evaluated 5 in Faculty of 1000.

2. Moreno E, Morata G
Caudal is the Hox gene that specifies the most posterior *Drosophila* segment
NATURE 400 (6747): 873-877 AUG 26, 1999.
Times Cited: 118

1. Calleja M, Moreno E, Pelaz S, Morata G.
Visualization of gene expression in living adult *Drosophila*
SCIENCE 274 (5285): 252-255 OCT 11, 1996.
Times Cited: 380

Total number of publications: 39, Total number of citations: 2138.
Average citations/publication: >50.
Highest altmetric score: 224



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i10-index=25, i100-index=6, h-index: 18

Other scientific publications:

6. Eduardo Moreno. Science and immortality: A scientific afterlife. LABTIMES issue 4 August 24th 2016, pages 16-17.

http://www.labtimes-archiv.de/epaper/LT_16_04/#16/z

5. Eduardo Moreno, Romain Levayer, Barbara Hauert Myc-induced cell mixing is required for competitive tissue invasion and destruction. bioRxiv doi.

<http://dx.doi.org/10.1101/020313>

Altmetric score: 5

4. Moreno, Eduardo. Design and construction of a new Drosophila species, D.synthetic, by synthetic regulatory evolution. Nature Precedings

<http://hdl.handle.net/10101/npre.2011.6511.1> > (2011)

3. Moreno, Eduardo y López-Gay, Jesús M. Competición celular: las guerras floridas. Investigación y Ciencia (Spanish version of Scientific American). 419, 130-133. August 2011.

2. Casas-Tinto, S. and Moreno, E. 細胞競合の勝者と敗者を規定する分子基盤実験医学 2011年6月号 Vol.29 No.9

1. Moreno, E. A war-prone tribe migrated out of Africa to populate the world. Nature Precedings <http://hdl.handle.net/10101/npre.2010.4303.1> > (2010)

Times Cited: 5

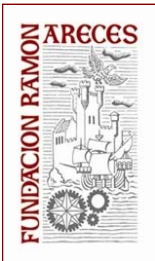
Book Chapters:

Field Cancerization: Basic Science and Clinical Applications. Nova Publishers. Ed. Gabriel Dakubo. 2010.

Chapter 1 - Expanding Supercompetitors as Mechanism of Field Cancerization. Eduardo Moreno, Christa Rhiner and Davide Soldini.

Other publications:

05 Feb 2010 - The Fiat Money Carry Trade to Buy Gold and Agriculture (7636 Reads). The Market Oracle. <http://www.marketoracle.co.uk/Article17033.html>



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21 Jan 2010 - How Predictable Are Black Swans? The Black Swan Hunters (17072 Reads). The Market Oracle. <http://www.marketoracle.co.uk/Article16657.html>

Euro Rail (a science fiction novel winner of the Arte Joven Prize). Eduardo Lampaya. 1999 Published by Visor Libros. ISBN: 978-84-7522-750-4.

Teaching and supervising experience:

October 2004-to date:

Course on stem cell biology for graduate students at the Universidad Autónoma.

Advisor of 4 doctoral theses. Head of the confocal microscopy unit CNIO. Professor of Genetiks at the University of Bern.

Seminars and Congresses:

More than 30 seminars and conferences given as invited speaker.

Recent selected seminars and conferences:

-EMBO Conference: The Molecular and Developmental Biology of Drosophila. Kolymbari, Crete, Greece. June 2014.

-Biology of Differentiation and Cancer, Technion, Haifa, (Israel) 2014. Keynote speaker.

-EDRC 23rd European Drosophila Research Conference. Barcelona, Spain. October 2013. Session and Workshop chair.

-Ecological and evolutionary perspectives in cancer. November 2-6, 2013, Roscoff

-15th EMBL PhD Symposium - Competition in Biology. EMBL, Heidelberg (Germany) 2013.

-Canceropole Conference Evolution and cancer Paris (France) 2013.

-2013 Drosophila Research Conference. Washington (USA), 2013.

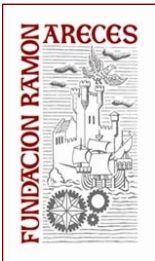
-EMBO meeting 2012. Nice (France). Cell Competition breakout session. Session Chair.

-Beatson Workshop. Cold Blooded Cancer. 2012. Glasgow (UK).

-Roscoff Development and Evolution Meeting. 2012. Roscoff (France).

-ISEH (Society for Hematology and Stem Cells). Vancouver (Canada). 2011. Presidential Symposium.

-Japanese Cell Biology Society meeting. Hokkaido (Japan). Cell Competition session. 2011.



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Current Research grants as Principal Investigator:

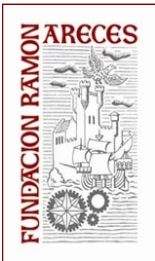
- ERC (European Research Council): Consolidator grant “Cell Fitness” (2 Million Euros/5 years)
- Josef Steiner Award 2011 Supercompetition and Cancer treatment (500.000 CHF/4 years)
- Swiss National Fund (SNF) 31003A_138359 Genetics of cell competition (450.000 CHF) (2011-2015).
- ERC Proof Of Concept Grant FLOWERFIELDS (Flower human isoforms as early cancer markers) (140.000 Euros/1 year) 2013-2014.
- Krebsforschung Schweiz (Swiss Cancer League). Flower-Lose activated by p53 and Flower-ubi activated by NF-kB determine the fate of cell competition in solid tumors. (240.000 CHF/2 years). (2013-2015).
- Strategic Japanese-Swiss Cooperative Research Program on “Medicine for an Aging Society” Preemptive cancer treatments based on detection and elimination of precancerous cells using cell competition and supercompetition markers” (150,000 CHF/3years for my laboratory plus an equivalent amount for the Japanese partner, Yasuyuki Fujita).
- HFSP postdoctoral grant to Romain Levayer to study the cell biology of Cell Competition (2012-2014).
- SNF South Africa cooperation grant (250,000 CHF/3 years).
- SNF Requip Grant (together with Beat Suter) to buy a new confocal microscopy with white laser and STED (1 million CHF).
- EMBO postdoctoral grant to Dina Coelho to study ageing and cell selection (2015-2017).

Review panels:

Peer-review for the Journals: Nature, Cell, Science, Genes & Development, EMBO Molecular Medicine, Current Biology, PNAS, EMBO Journal, Trends in Cancer, Trends Cell Biology, Development, Journal Cell Science, Plos Genetics, Carcinogenesis, Bioessays, PLoS ONE, Developmental Biology, Experimental Cell Research, Development Growth and Differentiation, FEBS letters, Journal of Visualized Experiments (JOVE), The International Journal of Developmental Biology, The International Journal of Biochemistry & Cell Biology

Peer-review for the Funding Agencies:

European Research Council (ERC), Cancer Research UK, Medical Research Council (MRC), FIS (Fondo de Investigaciones Sanitarias) (Ministry of Health, Spain), Ministerio de Ciencia y Tecnología de España (Ministry of Science and Technology), Human Frontiers Science Program (HFSP), NC3R, Fundação para a Ciência e a Tecnologia, I.P. (FCT).



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Editorial Board of Journals:

Academic editor of PEER J (ISSN2167-8359) since 2012.

Academic editor of PLOS ONE (ISSN1932-6203) since 2011.

Member of the Editorial Board of Cells (ISSN 2073-4409) since 2010.

Memberships:

Fly JEDI (Junior European Drosophila Investigators) since 2010.

Young Academy of Europe (YAE) since 2013.

Swiss Biochemical Society since 2012.

Patents:

MAMMALIAN HOMOLOGUES OF FLOWER, THEIR USE IN CANCER DIAGNOSTICS, PREVENTION AND TREATMENT.

C Rhiner, E Pertova, JM Lopez-gay, E Moreno

European Patent EP12156256, February 2012. PCT/EP2013/053163, February 2013.

US Patent 20,150,037,251 (2015).

Research and teaching interests:

Role of cell selection in aging and tissue health

Early stages of cancer

Cancer stem cells

How stem cells compare their fitness.

Cell selection processes in Drosophila, mouse and humans.

Active mechanisms of neuronal selection.

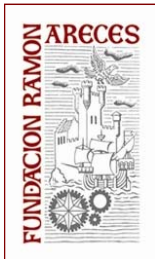
Cell Fitness maintenance in stem cell niches.

Synthetic biology and synthetic species.

Evolution of multicellular organisms.

Evolution of human culture.

Out of Africa migration.



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