Michael Rera, PhD, CRCN CNRS
Date of birth: 11/03/1983

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Group leader
Centre de Recherche Interdisciplinaire
Université Paris Cité/INSERM U1284
Paris, France

A. Education/Training

Institution & Location	Dates Attended	Degree	Conferred	Field of Study
Université de Paris	01/06/2022	HDR	01/06/2022	Life Sciences
Université Paris-Diderot	11/2006-5/2010	PhD	05/2010	Ageing and Genetics
Université Paris-Diderot	9/2003-10/2006	Magistère de Génétique	6/2006	Genetics
Université Paris-Diderot	9/2005-8/2006	Master 2	6/2006	Ageing and Genetics
Université Paris-Diderot	9/2004-6/2005	Maitrise/Master 1	6/2005	Genetics
Université Paris-Diderot	9/2003-6/2004	Licence	6/2004	Genetics
University Pierre et Marie Curie	9/2001-6/2003	DEUG	6/2003	Biology

B. Research positions

June 2020 – Group leader, Center for Research and Interdisciplinarity, Université de Paris, INSERM U1284, Paris, France

Jan. 2018 – June 2020 Group leader, Institut Biologie Paris Seine, CNRS/UMR8256 "Adaptation Biologique et Vieillissement", Paris, France

Oct 2013-Jan 2018 CR2 CNRS, Université Paris 7, CNRS/UMR8251 "Biologie Fonctionnelle et Adaptative", Paris, France

2010-2013 Postdoctoral Research Fellow, Department of Integrative Biology and Physiology, UCLA, Los Angeles, USA

Mentor: David W. Walker **Project**: Role of intestinal stem cells mitochondria in ageing

2006-2010 PhD candidate, Department of Genetics. Institut Jacques Monod

Mentor: Hervé Tricoire **Project**: Role of mitochondrial Electron Transfer Chain in ageing

C. Communications

2022 Two phases for studying ageing – *invited talk* at the BSI Immunosenescence Affinity Group, University of Sheffield

2021 Pourrait-on un jour prédire notre mort ? – *invited talk* at Centre d'éthique clinique AP-HP

2018 Enjeux éthiques et sociétaux de la prédiction de la mort– *invited talk* at Ministère de la Santé (Paris, France)

2017 New Views on Ageing (Paris, France) – *invited talk*

2016 drosoFrance 2016 (Grâce, France) – *talk*

2015 Molecular Biology of Ageing (Groningen, NL) – *poster*

2014 24th European Drosophila Research Conference (Heidelberg, Germany) – *poster*

2013 27th Annual French Drosophila conference (Obernai, France) – *talk*

D. Funding

2020 – 2024 ANR JCJC ADAGIO **289k€**

2020 – 2025 CRI Core Fellow – Fondation Bettencourt Schueller **650k€**

2019 Actions Incitatives IBPS/Sorbonne – Université, "High throughput drug screening using drosophila – the case of VGlut3"
20k€

2018 Actions Incitatives IBPS/Sorbonne – Université « Transposable elements remobilization in ageing and the end of life » **20k€**

2017 ATIP/Avenir group leader **180k€ + 2 years postdoc salary**

2017 Interdisciplinary PhD grant, Sorbonne-Université **3 years PhD salary**

E. Publications (total = 27, citations = 2303, h-index = 15)

1. M. Abakarova, C. Marquet, **M. Rera**, B. Rost, E. Laine. Alignment-based protein mutational landscape prediction: doing more with less.
biorxiv (2022)
2. L. Freoa, LM Cheving, P. Christol, S. Méléard, **M. Rera**, A. Véber, JM Gibert. Drosophilid cuticle pigmentation impacts body temperature. under review at Scientific Reports – biorxiv (2022)
3. F. Zane, H. Bouzid, S. Besse, SS. Marmol, JL Molina, C. Cansell, F. Aprahamian, S. Durand, J. Ayache, C. Antoniewski, **M. Rera**[1]**.** Smurness-based two-phase model of ageing helps deconvolve the ageing transcriptional signature. under review at Nature Ageing – biorxiv (2022)
4. RR. Martins, **M. Rera**, CM.Martins. Transcriptomic signatures of telomeras-dependent and independent ageing, in the zebrafish gut and brain. biorxiv (2022)
5. T. Roget, P. Jolivet, S. Méléard, **M. Rera**[1]**.** Positive selection of senescence through increased evolvability: ageing is not a by-product of evolution. biorxiv (2022)
6. C.Cansell, F.Bain, V.Goepp, N.Todd, V.Douard, F.Zane, C.Sanchez, N.Pietrancosta, C.Rovere, RGP Denis, S.Luquet, **M.Rera**[1]. Extending the two-phase model of ageing from Drosophila to mice helps better understand age-related and late-life metabolic decline. BMC Biology (in revision 2022)
7. B.Greshake Tzovaras, **M.Rera**, EH Wintermute, K.Kloppenborg, J.Ferry-Danini, G.Aidelberg, R.Aronoff, A.Lindner, D.Misevic. Empowering grassroots innovation to accelerate biomedical research. PLoS Biol 19(8): e3001349. (2021)
8. M.Gaille, M.Araneda, C.Dubost, C.Guillermain, S.Kaakai, E.Ricadat, N.Todd, **M.Rera**[1]. Conséquences éthiques et sociales de biomarqueurs prédictifs de la mort chez l'homme-La vieillesse et la mort, problématiques comportementales et sociétales. Médecine/sciences, 2020 invited article
9. M.Gaille[1], M.Araneda, C.Dubost, C.Guillermain, S.Kaakai, E.Ricadat, N.Todd, **M.Rera**[1]. Ethical and social implications of approaching death prediction in humans-when the biology of ageing meets existential issues. BMC Medical Ethics, 2020
10. S.Méléard, **M.Rera**[#], T.Roget. A birth–death model of ageing: from individual-based dynamics to evolutive differential inclusions. Journal of Mathematical Biology (2019)
11. A.Palandri, E.Martin, M.Russi, **M.Rera**, H.Tricoire, V.Monnier. Identification of cardioprotective drugs by medium-scale in vivo pharmacological screening on a Drosophila cardiac model of Friedreich's ataxia. Disease Models & Mechanisms 2018 11

12. R.R.Martins, A.W.McCracken, M.J.P. Simons, C.M.Henriques and **M.Rera**[1] How to Catch a Smurf? – Ageing and Beyond… In vivo Assessment of Intestinal Permeability in Multiple Model Organisms. Bio-protocol. Bio Protoc. 2018 Feb 5; 8(3): e2722.
13. **M.Rera**[1], C.Vallot, C.Lefrançois: *The Smurf transition: New insights on ageing from end-of-life studies in animal models*. Current Opinion in Oncology 1/2018; 30(1):1 invited opinion
14. A.Rana, M.P. Oliveira, A.V. Khamoui, R.Aparicio, **M.Rera**, H.B. Rossiter, D.W. Walker: *Promoting Drp1-mediated mitochondrial fission in midlife prolongs healthy lifespan of Drosophila melanogaster*. Nature Communications 12/2017; 8(1)
15. E.Dambroise, L.Monnier, L.Ruisheng, H.Aguilaniu, J-S.Joly, H.Tricoire, **M.Rera**[1]: *Two phases of aging separated by the Smurf transition as a public path to death.* Scientific Reports 03/2016; 6
16. H.Tricoire, **M.Rera**[1]: *A New, Discontinuous 2 Phases of Aging Model: Lessons from Drosophila melanogaster.* PLoS ONE 11/2015; 10(11)
17. A.Seguin, V.Monnier, A.Palandri, F.Bihel, **M.Rera**, M.Schmitt, J-M.Camadro, H.Tricoire, E.Lesuisse: *A Yeast/ Drosophila Screen to Identify New Compounds Overcoming Frataxin Deficiency.* Oxidative medicine and cellular longevity 10/2015; 2015(1):1-10
18. R.I.Clark, A.Salazar, R.Yamada, S.Fitz-Gibbon, M.Morselli, J.Alcaraz, A.Rana, **M.Rera**, M.Pellegrini, W.W.Ja, D.W.Walker: *Distinct Shifts in Microbiota Composition during Drosophila Aging Impair Intestinal Function and Drive Mortality.* Cell Reports 08/2015 12(10):1-12,
19. M.Ulgherait, A.Rana, **M.Rera**, J.Graniel, D.W.Walker: *AMPK Modulates Tissue and Organismal Aging in a Non-Cell-Autonomous Manner.* Cell Reports 09/2014; 8(6)
20. J.H.Hur, S.Bahadorani, J.Graniel, C.L.Koehler, M.Ulgherait, **M.Rera**, D.L.Jones, D.W. Walker: *Increased longevity mediated by yeast NDI1 expression in Drosophila intestinal stem and progenitor cells.* Aging 09/2013; 5(9)
21. **M.Rera**, R.I.Clark, D.W. Walker: *Why do old flies die?* Aging 08/2013; 5(8)
22. A.Rana, **M.Rera**, D.W.Walker: *Parkin overexpression during aging reduces proteotoxicity, alters mitochondrial dynamics, and extends lifespan.* Proceedings of the National Academy of Sciences 05/2013; 110(21)
23. **M.Rera*,** M.J.Azizi*, D.W.Walker *Organ-specific mediation of lifespan extension: More than a gut feeling?* Ageing research reviews (2012)
24. **M.Rera***, R.I.Clark*, D.W. Walker: *Intestinal barrier dysfunction links metabolic and inflammatory markers of aging to death in Drosophila*. Proceedings of the National Academy of Sciences (2012)
25. V.Monnier, M.Iché-Torres, **M.Rera**, V.Contremoulins, C.Guichard, N.Lalevée, H.Tricoire, L.Perrin : *dJun and Vri/dNFIL3 Are Major Regulators of Cardiac Aging in Drosophila.* November 2012 PLoS Genetics 8(11):e1003081
26. **M.Rera***, S.Bahadorani*, J.Cho*, C.L.Koehler, M.Ulgherait, J.H.Hur, W.S.Ansari, T.Lo, D.L.Jones, D.W.Walker. *Modulation of Longevity and Tissue Homeostasis by the Drosophila PGC-1 Homolog*. November 2011 Cell metabolism 14(5):623-34
27. **M.Rera**, V.Monnier, H.Tricoire. *Mitochondrial electron transport chain dysfunction during development does not extend lifespan in Drosophila melanogaster.* February 2010 Mechanisms of ageing and development 131(2):156-64

[#] authors in alphabetical order * equal contribution [1] corresponding/senior author

F. Teaching activities

2020 - Teaching for licence and masters “Frontières du Vivant”, UPC
2020 Conception and teaching of the Open Science course for Master 2 “Frontières du Vivant”
2013 - Master 2 research seminar for the masters Biology of Ageing and Longevity / Magistère de Génétique, specialization Ageing.

G. Supervision of students

Oct. 2022 – Co-supervision (as principal supervisor) of PhD candidate Marina Abakarova with Dr. Elodie Laine (MCF Sorbonne Université)
Jan. 2022 – Co-supervision (as principal supervisor) of PhD candidate Hayet Bouzid with Dr. Clément Carré (MCF Sorbonne Université)
Oct.2018 – June 2022 Supervision of PhD candidate Flaminia Zane
Project: Network Analysis of Pre-death Gene-Expression Changes
Sep.2015 – Nov.2018 Co-supervision of a PhD student, Tristan Roget, with Pr. Sylvie Méléard (Ecole Polytechnique)
Project: Modeling the evolutionary basis of the 2 phases of ageing model
Sep.2016 – Jan.2017 Supervision of License student. Isabel Berastain, Université de Barcelone.
2011 – 2013 Co-supervision of a PhD student, Matthew Ulghereit, in the laboratory of David Walker at UCLA, CA, USA
2010 – 2012 Supervision of three undergraduate students for 3 months to one year in the lab of David Walker at UCLA, CA, USA

H. Institutional responsibilities

2021 – Scientific expert for the Chaire de Mathématiques Appliquées de l’Ecole Polytechnique
2019 – Member of the scientific council for the Plateforme Nationale pour la Recherche sur la fin de vie
2018 – 2020 Graduate Student tutor of Margaret Ahmad’s PhD student
2015 – 2018 Graduate Student Advisor (comité de thèse) (Marie Durollet), Université de La Rochelle

I. Organization of scientific meetings

Oct. 2020 Junior European Drosophila Investigators (JEDI) 10th anniversary meeting
Nov. 2017 “31st French Drosophila Meeting” Giens. Approx. 90 participants
June 2016 “DIF day”. Institut Curie, Paris. Approx. 70 participants

J. Peer reviewing / Editorial activities

- Extensive reviewing activity peer reviewed journals (eLife, Current Aging Research, Experimental Physiology, PLOS ONE, Nature Communications…)
- Reviewing for grants Labex, NSERC Discovery Grants Program, ANR, FRC, Dunhill Medical Trust, INCa and SwissUniversities
- Guest Editor for Frontiers in Genetics, special issue on ageing