Thomas Langer

Personal Data

Title	Prof. Dr.
First name	Thomas
Name	Langer
Current position	Director, Max Planck Institute for Biology of Ageing, permanent
Current institution(s)/site(s), country	Dep. of Mitochondrial Proteostasis, Max Planck Institute for Biology of Ageing, Cologne, Germany
Identifiers/ORCID	0000-0003-1250-1462

Qualifications and Career

Stages	Periods and Details
Doctorate	1989–1993, Prof. Franz-Ulrich Hartl, Ludwig-Maximilians-University, Munich, Germany
Diploma	Biological Science, 1984–1989, University of Regensburg, Germany

Stages of Academic/Professional Career

Director	2018–present, Max Planck Institute for Biology of Ageing, Cologne, Germany
Full Professor (W3)	2001–2017, Institute for Genetics, University of Cologne, Germany
Group Leader	1996–2001, Adolf Butenandt Institute for Physiological Chemistry, Ludwig-Maximilians-University, Munich, Germany
Postdoctoral Fellow	1993–1996, Prof. Dr. Dr. Walter Neupert, Adolf Butenandt Institute for Physiological Chemistry, Ludwig-Maximilians-University, Munich, Germany
Visiting Scientist	1992–1993, Memorial Sloan-Kettering Cancer Institute, New York, NY, USA

Activities in the Research System

Institutional Responsibilities (selected)

2023–present	Managing Director, Max Planck Institute for Biology of Ageing, Cologne, Germany
2019–2023	Executive Board Member, CECAD Cluster of Excellence EXC 2030 (DFG) “Cellular Stress Responses in Aging-associated Diseases”, University of Cologne, Germany
2019–2023	Coordinator, Research Area 1 “Cell Autonomous Control of Homeostatic Mechanisms and Cellular Stress Responses in Aging and Aging-associated Diseases”, CECAD Cluster of Excellence EXC 2030 (DFG) “Cellular Stress Responses in Aging-associated Diseases”, University of Cologne, Germany
2019–2021	Managing Director, Max Planck Institute for Biology of Ageing, Cologne, Germany
2017	Pro-Dean for Personnel and Finances, Faculty of Mathematics and Natural Sciences, University of Cologne, Germany
2016–2017	Spokesperson, CRC 1218 (DFG) “Mitochondrial regulation of cellular function”, University of Cologne, Germany
2013–2015	Pro-Rector for Research and Junior Scholars, University of Cologne, Germany

2012–2018	Coordinator, Research Area A “Mitochondrial Dysfunction in Aging and Neurodegeneration”, CECAD Cluster of Excellence EXC 229 (DFG) “Cellular Stress Responses in Aging-associated Diseases”, University of Cologne, Germany
2012–2015	Steering Committee Member, Institutional Strategy of the University of Cologne, Germany
2010–2011	Managing Director, Biology Section of the Faculty of Mathematics and Natural Sciences, University of Cologne, Germany
2007–2018	Deputy Spokesperson, CECAD Cluster of Excellence EXC 229 (DFG) “Cellular Stress Responses in Aging-associated Diseases”, University of Cologne, Germany
2007–2011	Senator, Faculty of Mathematics and Natural Sciences, University of Cologne, Germany
2006–2017	Executive Board Member, Graduate School for Biological Sciences (GSfBS), University of Cologne, Germany
2003–2015	Spokesperson, CRC 635 (DFG) “Posttranslational control of protein function”, University of Cologne, Germany
2002–2004	Managing Director, Institute for Genetics, University of Cologne, Germany
2001–2009	Steering Committee Member, Center for Molecular Medicine Cologne (CMMC), Germany

Service to the Scientific Community (selected)

2018	Scientific Chair, Cell Press Symposium “Multifaceted Mitochondria”, San Diego, USA
2018	Chair, American Society for Cell Biology/EMBO Annual Meeting, San Diego, USA
2017	Organizer, EMBO Workshop, Xi´an, China 2016–
2019	Senator for Cell and Developmental Biology, DFG
2015	Chair, Keystone Symposium “Obesity and the Metabolic Syndrome: Mitochondria and Energy Expenditure”, Whistler, BC, Canada
2012–2020	Member, Board of Reviewing Editors, Science 2011–
2017	LS3 Panel Member and Chair, ERC Consolidator Grants
2010–present	Editorial Board Member, Journal of Cell Biology and EMBO Reports
2005–2012	Member and Chair, DFG Fachkollegium “Biochemistry, Biophysics and Bioinformatics”, Bonn, Germany

Scientific Results

Category A

Ahola, S., Pazurek, L., Mayer, F., Lampe, P., Hermans, S., Becker, L., Amarie, O.V., Fuchs, H., Gailus-Durner, V., Hrabe de Angelis, M., Riedel, D., Nolt, H., and **Langer, T.** (2024**)**. Opa1 processing is dispensable in mouse development but is protective in mitochondrial cardiomyopathy. **Sci Adv** 10:eadp0443. doi: 10.1126/sciadv.adp0443.

Grotehans, N., McGarry, L., Nolte, H., Xavier, V., Kroker, M., Narbona-Pèrez, ÁJ., Deshwal, S., Gavalisco, P., **Langer, T.**[#], and MacVicar, T.[#] (2023). Ribonucleotide synthesis by NME6 fuels mitochondrial gene expression. **EMBO J** *42*:e113256. doi: 10.15252/embj.2022113256. (open access)

Deshwal, S., Onishi, M., Tatsuta, T., Bartsch, T., Cors, E., Ried, K., Lemke, K., Nolte, H., Giavalisco, P., and **Langer, T.** (2023). Mitochondria regulate intracellular coenzyme Q transport and ferroptotic resistance via STARD7. **Nat Cell Biol** *25*:246–257. doi: 10.1038/s41556-022-01071-y. (open access)

Kohler, A., Carlström, A., Nolte, H., Kohler, V., Jung, S-J., Sridhara, S., Tatsuta, T., Berndtsson, J., **Langer, T.**[#], and Ott, M.[#] (2023). Early fate decision for mitochondrially encoded proteins by a molecular triage. **Mol Cell** *83*:3470–3484. doi: 10.1016/j.molcel.2023.09.001. (open access)

Rivera Meijias, P.*, Narbona-Perez, A.J.*, Hasberg, L., Kroczek, L., Bahat, A., Lawo, S., Folz-Donahue, K., Schumacher, A.-L., Ahola, S., Mayer, FC., Giavalisco, P., Nolte, H., Lavandero, S., and **Langer, T**. (2023). The mitochondrial protease OMA1 acts as metabolic safeguard upon nuclear DNA damage. **Cell Rep** *42*:112332. doi: 10.1016/j.celrep.2023.112332. (open access)

Ahola, S., Rivera Mejias, P., Hermans, S., Chandragiri, S., Giavalisco, P., Nolte, H., and **Langer, T.** (2022). OMA1-mediated integrated stress response protects against ferroptosis in mitochondrial cardiomyopathy. **Cell Metab** *34*:1875–1891. doi: 10.1016/j.cmet.2022.08.017. (open access)

Patron, M., Tarasenko, D., Nolte, H., Kroczek, L., Ghosh, M., Ohba, Y., Lasarzewski, Y., Ahmadi, Z.A., Cabrera-Orefice, Eiyama, A., Kellermann, T., Rugarli, E.I., Brandt, U., Meinecke, M., and **Langer, T**. (2022). Regulation of mitochondrial proteostasis by the proton gradient. **EMBO J** *41*:e110476. doi: 10.15252/embj.2021110476. (open access)

Sprenger, H.G.*, MacVicar, T.*, Bahat, A., Fiedler, K.U., Hermans, S., Ehrentraut, D., Ried, K., Milenkovic, D., Bonekamp, N., Larsson, N.G., Nolte, H., Giavalisco, P., and **Langer, T.** (2021). Cellular pyrimidine imbalance triggers mitochondrial DNA-dependent innate immunity. **Nat Metab** *3*:636–650. doi: 10.1038/s42255-021-00385-9. (open access)

MacVicar, T.*, Ohba, Y.*, Nolte, H., Mayer, F.C., Tatsuta, T., Sprenger, H.G., Lindner, B., Zhao, Y., Li, J.H., Bruns, C., Krüger, M., Habich, M., Riemer, J., Schwarzer, R., Pasparakis, M., Henschke, S., Brüning, J.C., Zamboni, N., and **Langer, T.** (2019). Lipid signalling drives proteolytic rewiring of mitochondria by YME1L. **Nature** *575*:361–365. doi: 10.1038/s41586-019-1738-6. (open access)

Miliara, X.*, Tatsuta, T.*, Berry, J.L.*, Rouse, S., Solak, K., Chorev, D., Wu, D., Robinson, C., Matthews, S.[#], and **Langer, T.**[#] (2019). Structural determinants of lipid specificity within Ups/PRELI lipid transfer proteins. **Nat Commun** *10*:1130. doi: 10.1038/s41467-019-09089-x. (open access)

** shared first authorship, [#] shared corresponding authorship*

Category B

Preprints, Reviews, and Commentaries (Non-peer-reviewed, selected)

Ahola, S., and **Langer, T.** (2024). Ferroptosis in mitochondrial cardiomyopathy. **Trends Cell Biol** *34*:150-160. doi: 10.1016/j.tcb.2023.06.002.

Academic Distinctions

2022	Elected Member, Academy for Health & Lifespan Research
2017	Max Delbrück Prize, University of Cologne, Germany
2017	EMBO Global Exchange Lecture Series Grant, China
2016	International Steenbock Lecturer, University of Wisconsin, Madison, WI, USA
2016	Wilhelm Feldberg Prize, UK
2015	Reinhart Koselleck Project, DFG
2012	Elected Member, Leopoldina (German National Academy of Sciences)
2011	Elected Member, North Rhine-Westphalian Academy of Sciences and Arts
2009	ERC Advanced Grant
2008–2014	Max Planck Fellow, Max Planck Institute for Biology of Ageing, Cologne, Germany
2007	Elected Member, European Molecular Biology Organization (EMBO)