

Björn Schumacher

Personal Data

Title	Prof. Dr.
First name	Björn
Name	Schumacher
Current position	Full Professor, permanent
Current institution(s)/site(s), country	Institute for Genome Stability in Aging and Disease (IGSAD) / CECAD, Faculty of Medicine, University of Cologne, Germany
Identifiers/ORCID	0000-0001-6097-5238

Qualifications and Career

Stages	Periods and Details
Doctorate	2000–2004, Dr. Anton Gartner, Max Planck Institute for Biochemistry, Ludwig-Maximilians-University, Munich, Germany
Master of Arts	Biological Sciences, 1999, State University of New York at Stony Brook, NY, USA

Stages of Academic/Professional Career

Full Professor (W3)	2013–present, University of Cologne, Germany
Director	2013–present, Institute for Genome Stability in Ageing and Disease (IGSAD), University of Cologne, Germany
Research Group Leader Tenure Track	2009–2013, CECAD, University of Cologne, Germany
Postdoctoral Fellow	2004–2008, Prof. Jan Hoeijmakers, Department of Genetics, Erasmus Medical Center, Rotterdam, The Netherlands

Engagement in the Research System

Institutional Responsibilities (selected)

2023–present	Spokesperson, RU 5504 (DFG) “Physiological causes and consequences of genome instability”, University of Cologne, Germany
2022–present	President, German Society for DNA Repair (DGDR)
2020–2022	Member, Steering Committee Health, European University of Well-Being (EUUniwell), University of Cologne, Germany
2019–present	Co-Director, Minerva Center for Biological Mechanisms of Healthy Ageing, Bar-Ilan University, Israel
2019–present	Executive Board Member, Cologne Center for Ethics, Rights, Economics, and Social Sciences of Health (ceres), University of Cologne, Germany
2018–2022	Member, Life Science Working Group of the Coimbra Group of European Universities
2015–2017	Faculty Council Member, Faculty of Medicine, University of Cologne
2014–2020	President, German Society for Aging Research (DGfA)
2014–2016	Managing Director, CECAD Research Center, University of Cologne
2012–present	Executive Board Member, Cologne Excellence Cluster EXC 229/2030 (DFG) “Cellular Stress Responses in Aging-associated Diseases” (CECAD), Cologne, Germany
2012–2016	Coordinator, FP7-PEOPLE-2012-ITN (EU), “Chronic DNA damage responses in Ageing”

Service to the Scientific Community (selected)

2025, 2023	Organizer, 1 st /2 nd EMBO Symposium “The aging of the genome”, Heidelberg, Germany
2024	Organizer, Genome Dynamics in Neuroscience and Aging (GNDA), Tsingtao, China
2022	Organizer, Minerva Workshop on “Metabolism and Aging”, Herzliya, Israel
2022	Organizer, European Worm Meeting, Vienna, Austria
2022	Organizer, FEBS Workshop “Ageing and Rejuvenation”, Mutters, Austria
2021	Guest Editor, “Aging and the Skin: A Special Issue”, J Invest Dermatol
2021	Organizer, Minerva Workshop on “DNA Repair and Aging”, virtual
2020–present	Member, DFG Fachkollegium “Medicine”, Bonn, Germany
2020	Organizer, 4 th German-French DNA Repair Meeting, Montpellier, France
2019	Organizer, FEBS Workshop “Ageing and Regeneration”, Innsbruck, Austria
2019	Organizer, 2 nd Cologne-Keio Symposium “Aging and aging-associated diseases”, Tokyo, Japan
2018–present	Liaison Lecturer, Friedrich-Naumann-Foundation 2018–
present	F1000 Faculty Member, Developmental Biology, Aging Section
2018–2022	Editorial Board Member, Mechanisms of Aging and Development
2018–2022	Editorial Board Member, Gerontology
2018	Organizer, Cologne-Keio Symposium “Aging and aging-associated diseases”, Cologne, Germany
2017	Organizer, 4 th German-French DNA Repair Meeting, Cologne, Germany
2017	Organizer, German Israeli Foundation (GIF) Young Scientists’ Meeting, Israel
2016–2024	Member, Science Network of the Konrad Adenauer Stiftung (Think Tank)
2016–2017	Selection Committee Member, Institut Pasteur, France
2016	Organizer, 2 nd Cologne Ageing Conference, Cologne, Germany
2015	Organizer, EMBO Workshop in “Developmental Circuits in Ageing”, Crete, Greece
2014, 2013	Organizer, 29 th /30 th Ernst-Klenk Symposium in Molecular Medicine, Cologne, Germany
2012–2017	Editorial Board Member, Bioessays 2010–
2020	Editorial Board Member, Scientific Reports

Scientific Results

Category A

Meyer, D.H.[#], and **Schumacher, B.**[#] (2024). Aging clocks based on accumulating stochastic variation. **Nat Aging** 4:871–885. doi: 10.1038/s43587-024-00619-x. (open access)

Bujarrabal-Dueso, A., Sendtner, G., Meyer, D.H., Chatzinikolaou, G., Stratigi, K., Garinis, G.A., and **Schumacher, B.** (2023). The DREAM complex functions as conserved master regulator of somatic DNA-repair capacities. **Nat Struct Mol Biol** 30:475–488. doi: 10.1038/s41594-023-00942-8. (open access)

Wang, S.[#], Meyer, D.H., and **Schumacher, B.**[#] (2023). Inheritance of paternal DNA damage by histone-mediated repair restriction. **Nature** 613:365–374. doi: 10.1038/s41586-022-05544-w. (open access)

Soltanmohammadi, N.*, Wang, S.*, and **Schumacher, B.** (2022). Somatic PMK-1/p38 signaling links environmental stress to germ cell apoptosis and heritable euploidy. **Nat Commun** 13:701. doi: 10.1038/s41467-022-28225-8. (open access)

Wang, S., Meyer, D.H., and **Schumacher, B.** (2020). H3K4me2 regulates the recovery of protein biosynthesis and homeostasis following DNA damage. **Nat Struct Mol Biol** 27:1165–1177. doi: 10.1038/s41594-020-00513-1. (open access)

Ackermann, L.*, Schell, M.*, Pokrzywa, W., Kevei, É., Gartner, A., **Schumacher, B.**#, and Hoppe, T.# (2016). E4 ligase-specific ubiquitination hubs coordinate DNA double-strand-break repair and apoptosis. **Nat Struct Mol Biol** 23:995–1002. doi: 10.1038/nsmb.3296. (open access)

Mueller, M.*, Castells-Roca, L.*, Babu, V., Ermolaeva, M.A., Müller, R.U., Frommolt, P., Williams, A.B., Greiss, S., Schneider, J.I., Benzing, T., Schermer, B., and **Schumacher, B.** (2014). DAF-16/FoxO and EGL-27/GATA promote developmental growth in response to persistent somatic DNA damage. **Nat Cell Biol** 16:1168–1179. doi: 10.1038/ncb3071. (open access)

Ermolaeva, M.A., Segref, A., Dakhovnik, A., Ou, H.L., Schneider, J.I., Utermöhlen, O., Hoppe, T., and **Schumacher, B.** (2013). DNA damage in germ cells induces an innate immune response that triggers systemic stress resistance. **Nature** 501:416–420. doi: 10.1038/nature12452. (open access)

Schumacher, B., Pothof, J., Vijg, J., and Hoeijmakers, J.H.J. (2012). The central role of DNA damage in the ageing process. **Nature** 592:695–703. doi: 10.1038/s41586-021-03307-7. (open access)

Garinis, G.A., Uittenboogaard, L.M., Stachelscheid, H., Fousteri, M., van Ijcken, W., Breit, T.M., van Steeg, H., Mullenders, L.H.F., van der Horst, G.T.J., Brüning, J.C., Niessen, C.M., Hoeijmakers, J.H.J., and **Schumacher, B.** (2009). Persistent transcription-blocking DNA lesions trigger somatic growth attenuation associated with longevity. **Nat Cell Biol** 11:604–615. doi: 10.1038/ncb1866. (open access)

* shared first authorship, # shared corresponding authorship

Category B

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

Gallrein, C., Meyer, D., and **Schumacher, B.** (2024). Neuron-type specific aging-rate reveals age decelerating interventions preventing neurodegeneration. **Research Square**. doi: 10.21203/rs.3.rs-4360587/v1.

Schumacher, B., Pothof, J., Vijg, J., and **Hoeijmakers, J.H.J.** (2021). The central role of DNA damage in the ageing process. **Nature** 592:695–703. doi: 10.1038/s41586-021-03307-7. (open access)

Schumacher, B.#, and Vijg, J.# (2019). Age is in the nucleus. **Nat Metab** 1:931–932. doi: 10.1038/s42255-019-0125-9. (open access)

Mkrtchyan, G.V., Abdelmohsen, K., Andreux, P., Bagdonaitė, I., Barzilai, N., Brunak, S., Cabreiro, F., de Cabo, R., Campisi, J., Cuervo, A.M., Demaria, M., Ewald, C.Y., Fang, E.F., Faragher, R., Ferrucci, L., Freund, A., Silva-García, C.G., Georgievskaya, A., Gladyshev, V.N., Glass, D.J., Gorbunova, V., de Grey, A., He, W.W., Hoeijmakers, J.H.J., Hoffmann, E., Horvath, S., Houtkooper, R.H., Jensen, M.K., Jensen, M.B., Kane, A., Kassem, M., de Keizer, P., Kennedy, B., Karsenty, G., Lamming, D.W., Lee, K.F., MacAulay, N., Mamoshina, P., Mellon, J., Molenaars, M., Moskalev, A., Mund, A., Niedernhofer, L., Osborne, B., Pak, H.H., Parkhitko, A., Raimundo, N., Rando, T.A., Rasmussen, L.J., Reis, C., Riedel, C.G., Franco-Romero, A., **Schumacher, B.**, Sinclair, D.A., Suh, Y., Taub, P.R., Toiber, D., Trebak, J.T., Valenzano, D.R., Verdin, E., Vijg, J., Young, S., Zhang, L., Bakula, D., Zhavoronkov, A., and Scheibye-Knudsen, M. (2020). ARDD 2020: from aging mechanisms to interventions. **Aging** 12:24484–24503. doi: 10.18632/aging.202454. (open access)

Books and Book Chapters

Schumacher, B. (2015). *Das Geheimnis des menschlichen Alterns*. Blessing; English version: *The Mystery of Human Aging: Surprising Insight from a Science That's Still Young*, Algora Publishing (2017)

Public Outreach Activities (selected)

2024	Hessischer Rundfunk INFO Podcast series: "The Topic": "Hoffnung auf Heilung – Medizin von morgen"
2023	CECAD Aging Research Series at VHS Cologne "CECAD goes public": "Das Geheimnis des menschlichen Alterns"
2022	Podcast Series "Exzellente erklärt – Spitzenforschung für alle" by the DFG: "Altern – wie können wir gesund alt werden?" (together with Cristina Maria Polidori)
2019	Organizer, Public Rare Diseases Days, Cologne, Germany
2014	DNA Repair and Health Days, Cologne, Germany

Academic Distinctions

2023	ERC Synergy Grant
2023	Reinhart Koselleck Project, DFG
2019	Eva Luise Köhler Research Prize for Rare Diseases
2010	ERC Starting Grant
2009	Innovation Prize of the State of North-Rhine Westphalia, Germany 2005–
2008	EMBO Long-Term Fellowship and Marie Curie Intra-European Fellowship