Frank Madeo

Director of Research

Institute of Molecular Biosciences
University of Graz

ORCID ID: https://orcid.org/0000-0002-5070-1329

SCIENTIFIC & ACADEMIC CAREER

since 2004	Contract as a Full Professor at the University of Graz, Austria
1997-2004	Group leader at the University of Tübingen, Germany
1994-1997	Ph.D. Thesis "*Tyrosin phosphorylation and apoptosis in yeast*", University of Tübingen, Germany, with first class honors
1987-1993	Studies of Biochemistry, University of Tübingen, Germany

MAIN AREA OF RESEARCH

Frank Madeo has made two groundbreaking discoveries, which have each developed into an own research field: first, the discovery of programmed cell death in single-celled baker's yeast and second, the implementation of spermidine as a physiological and thus non-toxic autophagy inducer that extends the life and healthspan of various organisms. Both discoveries have not only torn down dogmas and explained molecularly exciting mechanisms, but they have already been translated into medical research.

ADDITIONAL RESEARCH ACTIVITIES *(10 most important)*

2007-2014	Vice speaker of the FWF-funded research consortium SFB LIPOTOX
Since 2014	Editor-in-Chief for Microbial Cell
2017-2020	Speaker of the BioTechMed-Graz Flagship Project "EPIAge"
Since 2019	Head of the "Field of Excellence BioHealth" at the University of Graz

Selected Presentations

07/2017	„*The Ins and Outs of Aging: Molecular Process to Systems Biology of Aging.*" Cell Intrinsic Changes Associated with Aging. Gordon Research Conference, Les Diablerets (Switzerland)
09/2017	"*Caloric restriction mimetics promote longevity*", The 5th Helmholtz-Nature Medicine Diabetes Conference, Munich (Germany)

Honors & Awards

2003	Heisenberg fellow of the Deutsche Forschungsgemeinschaft
2015	Erzherzog Johann-Forschungspreis, the highest distinction in Styria
2018	Elected fellow of the American Academy of Microbiology
2019	SENECA Medal for ageing research/University of Düsseldorf

10 MOST IMPORTANT PUBLICATIONS

1. Schroeder S, Hofer SJ, Zimmermann A, […], Madeo F (2021) Dietary spermidine improves cognitive function. **Cell Rep**. 35(2):108985. doi: 10.1016/j.celrep.2021.108985. *[1]
2. Stekovic S, Hofer SJ, […], Madeo F (2020). Alternate Day Fasting Improves Physiological and Molecular Markers of Aging in Healthy, Non-obese Humans. **Cell Metab.** 31(4):878-881. doi: 10.1016/j.cmet.2020.02.011.
3. Carmona-Gutierrez D, Zimmermann A, […], Pieber TR, Sadoshima J, Ventura N, Sigrist SJ, Kroemer G, Madeo F (2019) The flavonoid 4,4'-dimethoxychalcone promotes autophagy-dependent longevity across species. **Nat Commun**. 2019 Feb 19;10(1):651. doi: 10.1038/s41467-019-08555-w.
4. Madeo F, Eisenberg T, Pietrocola F, Kroemer G (2018) Spermidine in health and disease. **Science**. 2018 Jan 26;359(6374):eaan2788. doi: 10.1126/science.aan2788.
5. Eisenberg T, […], Madeo F (2016). Cardioprotection and lifespan extension by the natural polyamine spermidine. **Nat Med**. 22(12): 1428–1438. doi: 10.1038/nm.4222.
6. Eisenberg T, Schroeder S, […], Pieber T, Dengjel J, Sigrist SJ, Kroemer G, and Madeo F (2014). Nucleocytosolic Depletion of the Energy Metabolite Acetyl-Coenzyme A Stimulates Autophagy and Prolongs Lifespan. **Cell Metab.** 19(3):431-44. doi: 10.1016/j.cmet.2014.02.010.
7. Eisenberg T, Knauer H, Schauer A, Büttner S, Ruckenstuhl C, Carmona-Gutierrez D, Ring J, Schroeder S, Magnes C, Antonacci L, Fussi H, Deszcz L, Hartl R, Schraml E, Criollo A, Megalou E, Weiskopf D, Laun P, Heeren G, Breitenbach M, Grubeck-Loebenstein B, Herker E, Fahrenkrog B, Fröhlich K-U, Sinner F, Tavernarakis N, Minois N, Kroemer G, and Madeo F (2009). Induction of autophagy by spermidine promotes longevity. **Nat Cell Biol.** 11(11): 1305–1314. doi: 10.1038/ncb1975.
8. Büttner S, Eisenberg T, Carmona-Gutierrez D, Ruli D, Knauer H, Ruckenstuhl C, Sigrist C, Wissing S, Kollroser M, Fröhlich K-U, Sigrist S, and Madeo F (2007). Endonuclease G Regulates Budding Yeast Life and Death. **Mol Cell.** 25(2): 233–246. doi: 10.1016/j.molcel.2006.12.021.
9. Herker E, Jungwirth H, Lehmann KA, Maldener C, Fröhlich KU, Wissing S, Büttner S, Fehr M, Sigrist S, Madeo F (2004). Chronological aging leads to apoptosis in yeast**. J Cell Biol.** 164(4):501-7. doi: 10.1083/jcb.200310014.
10. Madeo F, Herker E, Maldener C, Wissing S, Lächelt S, Herlan M, Fehr M, Lauber K, Sigrist SJ, Wesselborg S, Fröhlich KU (2002). A caspase-related protease regulates apoptosis in yeast. **Mol Cell.** 9(4):911-7. doi: 10.1016/s1097-2765(02)00501-4.