Sabrina Büttner — Curriculum Vitae

Born: 08.08.1978 in Mutlangen, Germany
Current address: Department of Molecular Biosciences, Wenner-Gren Institut, Stockholm University
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Scientific career

Since 10/2015	**Assistant Professor** *Department of Molecular Biosciences, Wenner-Gren Institute, Stockholm University*
Since 2014	**Assistant Professor** *Institute of Molecular Biosciences, Karl-Franzens University Graz, Austria*
10/2014-8/2015	**Parental leave** for 10 months
2012-2015	**Principle Investigator** (Elise Richter Grant, Austrian Science Fund FWF) *IMB, Karl-Franzens University Graz, Austria* "Calcium as principal regulator of cell death during Parkinson's disease"
9/2012-7/2013	**Parental leave** for 10 months
2009-2012	**Principle Investigator** (Hertha-Firnberg Grant, Austrian Science Fund FWF) *IMB, Karl-Franzens University Graz, Austria* "Deciphering the molecular mechanisms underlying Parkinson's disease"
2010-2011	**Visiting postdoctoral fellow** *Institute for Genetics, FU Berlin, Germany* (Prof. Stephan Sigrist) "D. melanogaster models of Parkinson's disease"
2007-2009	**Postdoctoral fellow** *IMB, Karl-Franzens University Graz, Austria* in the group of Prof. Frank Madeo

Qualifications required for appointment as a docent

2013	**Habilitation** "Molecular mechanisms of neurotoxic cell death" *Venia docendi* in molecular biology and biochemistry

Education

2004-2007	**PhD Studies in Molecular Biology** *IMB, Karl-Franzens University Graz, Austria* Thesis: "Tracing new cell death pathways" Supervisor: Prof. Frank Madeo
2004	**Diploma in Biochemistry** *Physiologisch-Chemisches Institut, University of Tübingen, Germany* Diploma thesis: "Aif1p – a molecular Dr. Jekyll and Mr. Hyde" Supervisor: Prof. Frank Madeo
1999-2004	**Studies in Biochemistry** *Eberhard Karls University of Tübingen, Germany*

Awards and Distinctions

2015	**Sven och Ebba-Christina Hagberg price** for important research in cellular aging
2015	**Joseph-Krainer Würdigungspreis** for excellent research performance
2008	**GE & Science Award**, European winner for the best PhD thesis
2008	**ÖGGGT award** for "Endo G regulates budding yeast life and death", *Mol Cell*
2004	**Mobbel-price** for outstanding diploma thesis
2004	**Aventis [i]lab travel grant** (Singapore)
2002	**DAAD research scholarship** (Pakistan)

Funding and Grants

Since 2016	**Vetenskapsrådet / Swedish Research Council** *"Pho88, a protein at the crossroads of phosphate transport, mitochondrial dynamics and mitophagy"* Funding Volume: ~3.2 Mio SEK (~340.000 €)
Since 2015	**Stand-alone Project, Austrian Science Fund (FWF) (P27183-B24)** *"Dysregulation of autophagy by LRRK2 and α-synuclein in PD models"* Funding Volume: ~420.000 €
2012-2015	**Elise-Richter Project, Austrian Science Fund (FWF) (V235-B09)** *"Calcium as principal regulator of cell death during Parkinson's disease"* Funding Volume: ~170.000 €
2009-2012	**Hertha Firnberg Project, Austrian Science Fund (FWF) (T414-B09)** *"Deciphering the molecular mechanisms underlying Parkinson's disease"* Funding Volume: ~200.000 €

Reviewer and Editor

Since 2015	Editor for "YEAST"
Since 2014	Editor for "Microbial Cell"
Since 2012	Reviewer for several journals (*BBA, Plos ONE, DNA and Cell Biology, FEMS Yeast Research, Marine Drugs, YEAST, Experimental Gerontology, Journal of Proteome Research, Journal of Neuroscience*)
Since 2012	Grant Reviewer for Research Foundation Flanders (FWO) and Wellcome Trust

Publications

1. Aufschnaiter A, Kohler V, Diessl J, Peselj C, Carmona-Gutierrez D, Keller W, **Büttner S***. Mitochondrial lipids in neurodegeneration. *Cell Tissue Res*. 2016. doi:10.1007/s00441-016-2463-1

   *Impact factor: 3.0; *Corresponding author*

2. Aufschnaiter A, and **Büttner S***. Peroxisomal fission controls yeast life span. *Cell Cycle*. 2015 Aug 3;14(15):2389-90. doi: 10.1080/15384101.2015.1063303.

   *Impact factor: 5.0; *Corresponding author*

3. **Büttner S**, Broeskamp F, Sommer C, Markaki M, Habernig L, Alavian-Ghavanini A, Carmona-Gutierrez D, Eisenberg T, Michael E, Kroemer G, Tavernarakis N, Sigrist S, Madeo F. Spermidine protects against α-synuclein cytotoxicity. *Cell Cycle*. 2014 Dec 15 ; 13(24) :3903-8

   Impact factor: 5.0

4. Eisenberg T, Schroeder S, **Büttner S**, Carmona-Gutierrez D, Pendl T, Andryushkova A, Mariño G, Pietrocola F, Harger A, Zimmermann A, Magnes C, Sinner F, Sedej S, Pieber TR, Dengjel J, Sigrist S, Kroemer G, Madeo F. A histone point mutation that switches on autophagy. *Autophagy*. 2014 Jun 1;10(6):1143-114

   Impact factor: 11.4

5. Carmona-Gutierrez D and **Büttner S***. The many ways to age for a single yeast cell. *Yeast*. 2014 May 20. doi: 10.1002/yea.3020

   *Impact factor: 2.0; *Corresponding author*

6. Ruckenstuhl C, Netzberger C, Entfellner I, Carmona-Gutierrez D, Kickenweiz T, Stekovic S, Gleixner C, Schmid C, Klug L, Hajnal I, Sorgo AG, Eisenberg T, **Büttner S**, Mariño G, Koziel R, Magnes C, Sinner F, Pieber TR, Jansen-Dürr P, Fröhlich K-U, Kroemer G, and Madeo F. Autophagy extends lifespan via vacuolar acidification. *Microbial Cell* 2014 May 1; 5:160 - 162; DOI: 10.15698/mic2014.05.147

   Impact factor: na

7. Ruckenstuhl C, Netzberger C, Entfellner I, Carmona-Gutierrez D, Kickenweiz T, Stekovic S, Gleixner C, Schmid C, Klug L, Sorgo AG, Eisenberg T, **Büttner S**, Mariño G, Koziel R, Jansen-Dürr P, Fröhlich KU, Kroemer G, Madeo F. Lifespan extension by methionine restriction requires autophagy -dependent vacuolar acidification. *PLoS Genet.* 2014 May 1;10(5):e1004347.

   Impact factor: 8.5

8. Eisenberg T, Schroeder S, Andryushkova A, Pendl T, Küttner V, Bhukel A, Mariño G, Pietrocola F, Harger A, Zimmermann A, Moustafa T, Sprenger A, Jany E**, Büttner S**, Carmona-Gutierrez D, Ruckenstuhl C, Ring J, Reichelt W, Schimmel K, Leeb T, Moser C, Schatz S, Kamolz LP, Magnes C, Sinner F, Sedej S, Fröhlich KU, Juhasz G, Pieber TR, Dengjel J, Sigrist SJ, Kroemer G, Madeo F. Nucleocytosolic depletion of the energy metabolite acetyl-coenzyme a stimulates autophagy and prolongs lifespan. *Cell Metab*. 2014 Mar 4;19(3):431-44. doi: 10.1016/j.cmet.2014.02.010.

   Impact factor: 14.6

9. **Büttner S**, Habernig L, Broeskamp F, Ruli D, Vögtle FN, Vlachos M, Macchi F, Küttner V, Carmona-Gutierrez D, Eisenberg T, Ring J, Markaki M, Aras Taskin A, Benke S, Ruckenstuhl C, Braun R, Van den Haute C, Bammens T, van der Perren A, Fröhlich KU, Winderickx J, Kroemer G, Baekelandt V, Tavernarakis N, Kovacs GG, Dengjel J, Meisinger C, Sigrist SJ and Madeo F. Endonuclease G mediates α-synuclein cytotoxicity during Parkinson's disease. *EMBO J.* 2013 Oct 15. doi: 10.1038/emboj.2013.228

   Impact factor: 9.8

10. Eisenberg T and **Büttner S***. Lipids and cell death in yeast. *FEMS Yeast Res.* 2013 Oct 3. doi: 10.1111/1567-1364.12105

    *Impact factor: 2.5; *Corresponding author*

11. Carmona-Gutierrez D, Alavian-Ghavanini A, Habernig L, Bauer MA, Hammer A, Rossmann C, Zimmermann AS, Ruckenstuhl C, **Büttner S**, Eisenberg T, Sattler W, Malle E, Madeo F. The cell death protease Kex1p is essential for hypochlorite-induced apoptosis in yeast. *Cell Cycle*. 2013 May 1;12(11).

    Impact factor: 5.0

12. **Büttner S**, Faes L, Reichelt NR, Broeskamp F, Habernig L, Benke S, Kourtis N, Ruli D, D'hooge P, Ghillebert R, Eisenberg T, Carmona Gutierrez D, Franssens V, Harger A, Pieber TR, Freudenberger P, Kroemer G, Sigrist SJ, Winderickx J, Callewaert G, Tavernarakis N, Madeo F. The Ca2+/Mn2+ ion-pump PMR1 links elevation of cytosolic Ca2+ levels to α-synuclein toxicity in Parkinson's disease models. *Cell Death Differ.* 2012. 10:1038/cdd.2012.142

    Impact factor: 8.4

13. Rinnerthaler M, **Büttner S**, Laun P, Heeren G, Felder TK, Klinger H, Weinberger M, Stolze K, Grousl T, Hasek J, Benada O, Frydlova I, Klocker A, Simon-Nobbe B, Jansko B, Breitenbach-Koller H, Eisenberg T, Gourlay CW, Madeo F, Burhans WC, Breitenbach M. Yno1p/Aim14p, a NADPH-oxidase ortholog, controls extramitochondrial reactive oxygen species generation, apoptosis, and actin cable formation in yeast. *Proc Natl Acad Sci*. 2012. 109 (22):8658–8663.

    Impact factor: 9.7

14. Laun P, **Büttner S**, Rinnerthaler M, Burhans WC, Breitenbach M. Yeast aging and apoptosis. *Subcell Biochem*. 2012;57:207-32.

    Impact factor: 5.1

15. Breitenbach M, Laun P, Dickinson JR, Klocker A, Rinnerthaler M, Dawes IW, Aung-Htut MT, Breitenbach-Koller L, Caballero A, Nyström T, **Büttner S**, Eisenberg T, Madeo F, Ralser M. The role of mitochondria in the aging processes of yeast. *Subcell Biochem*. 2012;57:55-78.

    Impact factor: 5.1

16. Carmona-Gutierrez D, Reisenbichler A, Heimbucher P, Bauer MA, Braun RJ, Ruckenstuhl C, **Büttner S**, Eisenberg T, Rockenfeller P, Fröhlich KU, Kroemer G, Madeo F. Ceramide triggers metacaspase-independent mitochondrial cell death in yeast. *Cell Cycle.* 2011;10(22):3973-8.

    Impact factor: 5.0

17. Swinnen E, **Büttner S**, Outeiro TF, Galas MC, Madeo F, Winderickx J, Franssens V. Aggresome formation and segregation of inclusions influence toxicity of α-synuclein and synphilin-1 in yeast. *Biochem Soc Trans*. 2011;39(5):1476-81.

    Impact factor: 2.6

18. Haemmerle G, Moustafa T, Woelkart G, **Büttner S**, Schmidt A, van de Weijer T, Hesselink M, Jaeger D, Kienesberger PC, Zierler K, Schreiber R, Eichmann T, Kolb D, Kotzbeck P, Schweiger M, Kumari M, Eder S, Schoiswohl G, Wongsiriroj N, Pollak NM, Radner FP, Preiss-Landl K, Kolbe T, Rülicke T, Pieske B, Trauner M, Lass A, Zimmermann R, Hoefler G, Cinti S, Kershaw EE, Schrauwen P, Madeo F, Mayer B, Zechner R. ATGL-mediated fat catabolism regulates cardiac mitochondrial function via PPAR-α and PGC-1. *Nat Med.* 2011;17(9):1076-85.

    Impact factor: 22.9

19. Galluzzi L, Vanden Berghe T, Vanlangenakker N, **Buettner S**, Eisenberg T, Vandenabeele P, Madeo F, Kroemer G. Programmed necrosis from molecules to health and disease. *Int Rev Cell Mol Biol.* 2011;289:1-35.

    Impact factor: 6.1

20. Braun RJ, Sommer C, Carmona-Gutierrez D, Khoury CM, Ring J, **Büttner S**, Madeo F. Neurotoxic 43-kDa TAR DNA-binding protein (TDP-43) triggers mitochondrion-dependent programmed cell death in yeast. *J Biol Chem.* 2011 Jun 3;286(22):19958-72.

    Impact factor: 4.8

21. **Büttner S**, Ruli D, Vögtle FN, Galluzzi L, Moitzi B, Eisenberg T, Kepp O, Habernig L, Carmona-Gutierrez D, Rockenfeller P, Laun P, Breitenbach M, Khoury C, Fröhlich KU, Rechberger G, Meisinger C, Kroemer G, Madeo F. A yeast BH3-only protein mediates the mitochondrial pathway of apoptosis. *EMBO J*. 2011 Jun 14;30(14):2779-92.

    Impact factor: 9.8

22. Carmona-Gutiérrez D, Bauer MA, Ring J, Knauer H, Eisenberg T, **Büttner S**, Ruckenstuhl C, Reisenbichler A, Magnes C, Rechberger GN, Birner-Gruenberger R, Jungwirth H, Fröhlich KU, Sinner F, Kroemer G, Madeo F. The propeptide of yeast cathepsin D inhibits programmed necrosis. *Cell Death Dis*. 2011.19;2:e161.

    Impact factor: 6.0

23. **Büttner S**, Delay C, Franssens V, Bammens T, Ruli D, Zaunschirm S, de Oliveira RM, Outeiro TF, Madeo F, Buée L, Galas MC, Winderickx J. Synphilin-1 enhances α-synuclein aggregation in yeast and contributes to cellular stress and cell death in a Sir2-dependent manner. *PLoS One*. 2010 Oct 27;5(10):e13700.

    Impact factor: 3.7

24. Rockenfeller P, Ring J, Muschett V, Beranek A, **Buettner S**, Carmona-Gutierrez D, Eisenberg T, Khoury C, Rechberger G, Kohlwein SD, Kroemer G, Madeo F. Fatty acids trigger mitochondrion-dependent necrosis. *Cell Cycle*. 2010 Jul 15;9(14):2836-42.

    Impact factor: 5.0

25. Carmona-Gutierrez D, Ruckenstuhl C, Bauer MA, Eisenberg T, **Büttner S**, Madeo F. Cell death in yeast: growing applications of a dying buddy. *Cell Death Differ.* 2010 May;17(5):733-4.

    Impact factor: 8.4

26. Eisenberg T, Carmona-Gutierrez D, **Büttner S**, Tavernarakis N, Madeo F. Necrosis in yeast. *Apoptosis*. 2010 Mar;15(3):257-68.

    Impact factor: 3.9

27. Madeo F, Eisenberg T, **Büttner S**, Ruckenstuhl C, Kroemer G. Spermidine: a novel autophagy inducer and longevity elixir. *Autophagy*. 2010 Jan;6(1):160-2.

    Impact factor: 11.4

28. Carmona-Gutierrez D, Eisenberg T, **Büttner S**, Meisinger C, Kroemer G, Madeo F. Apoptosis in yeast: triggers, pathways, subroutines. *Cell Death Differ.* 2010 May;17(5):763-73.

    Impact factor: 8.4

29. Franssens V, Boelen E, Anandhakumar J, Vanhelmont T, **Büttner S**, Winderickx J. Yeast unfolds the road map toward alpha-synuclein-induced cell death. *Cell Death Differ.* 2010;17(5):746-53.

    Impact factor: 8.4

30. Braun RJ, **Büttner S**, Ring J, Kroemer G, Madeo F. Nervous yeast: modeling neurotoxic cell death. *Trends Biochem Sci.* 2010 Mar;35(3):135-44.

    Impact factor: 10.9

31. 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 KU, Sinner F, Tavernarakis N, Minois N, Kroemer G, Madeo F. Induction of autophagy by spermidine promotes longevity. *Nat Cell Biol.* 2009 Nov;11(11):1305-14.

    Impact factor: 20.1

32. Madeo F, Carmona-Gutierrez D, Ring J, **Büttner S**, Eisenberg T, Kroemer G. Caspase-dependent and caspase-independent cell death pathways in yeast. *Biochem Biophys Res Commun*. 2009 May 1;382(2):227-31.

    Impact factor: 2.4

33. Ruckenstuhl C, **Büttner S**, Carmona-Gutierrez D, Eisenberg T, Kroemer G, Sigrist SJ, Fröhlich KU, Madeo F. The Warburg effect suppresses oxidative stress induced apoptosis in a yeast model for cancer. *PLoS One*. 2009;4(2):e4592.

    Impact factor: 3.7

34. Jungwirth H, Ring J, Mayer T, Schauer A, **Büttner S**, Eisenberg T, Carmona-Gutierrez D, Kuchler K, Madeo F. Loss of peroxisome function triggers necrosis. *FEBS Lett.* 2008 Aug 20;582(19):2882-6

    Impact factor: 3.5

35. Low CP, Shui G, Liew LP, **Büttner S**, Madeo F, Dawes IW, Wenk MR, Yang H. Caspase-dependent and -independent lipotoxic cell-death pathways in fission. *J Cell Sci.* 2008 Aug 15;121:2671-84.

    Impact factor: 5.9

36. **Büttner S**, Bitto A, Ring J, Augsten M, Zabrocki P, Eisenberg T, Jungwirth H, Hutter S, Carmona-Gutierrez D, Kroemer G, Winderickx J, Madeo F. Functional mitochondria are required for alpha-synuclein toxicity in aging yeast. *J Biol Chem*. 2008 Mar 21;283(12):7554-60.

    Impact factor: 4.8

37. Almeida B, **Büttner S**, Ohlmeier S, Silva A, Mesquita A, Sampaio-Marques B, Osório NS, Kollau A, Mayer B, Leão C, Laranjinha J, Rodrigues F, Madeo F, Ludovico P. NO-mediated apoptosis in yeast. *J Cell Sci*. 2007 Sep 15;120(Pt 18):3279-88.

    Impact factor: 5.3

38. **Büttner S**, Carmona-Gutierrez D, Vitale I, Castedo M, Ruli D, Eisenberg T, Kroemer G, Madeo F. Depletion of endonuclease G selectively kills polyploid cells. *Cell Cycle*. 2007 May 2;6(9):1072-6.

    Impact factor: 5.0

39. Eisenberg T, **Büttner S**, Kroemer G, Madeo F. The mitochondrial pathway in yeast apoptosis. *Apoptosis*. 2007 May;12(5):1011-23.

    Impact factor: 3.9

40. **Büttner S**, Carmona-Gutierrez D, Eisenberg T, Ruli D, Madeo F. Conspiracy of yeast killers: the fifth international meeting on yeast apoptosis in Prague, Czech Republic, 3-7 September, 2006. *FEMS Yeast Res*. 2007 Mar;7(2):351-4.

    Impact factor: 2.5

41. **Büttner S**, Eisenberg T, Carmona-Gutierrez D, Ruli D, Knauer H, Ruckenstuhl C, Sigrist C, Wissing S, Kollroser M, Fröhlich KU, Sigrist S, Madeo F. Endonuclease G regulates budding yeast life and death. *Mol Cell*. 2007 Jan 26;25(2):233-46.

    Impact factor: 14.5

42. **Büttner S**, Eisenberg T, Herker E, Carmona-Gutierrez D, Kroemer G, Madeo F. Why yeast cells can undergo apoptosis: death in times of peace, love, and war. *J Cell Biol*. 2006 ;175(4):521-5.

    Impact factor: 10.8

43. Braun RJ, Zischka H, Madeo F, Eisenberg T, Wissing S, **Büttner S**, Engelhardt SM, Büringer D, Ueffing M. Crucial mitochondrial impairment upon CDC48 mutation in apoptotic yeast. *J Biol Chem*. 2006 Sep 1;281(35):25757-67.

    Impact factor: 4.8

44. Allen C, **Büttner S**, Aragon AD, Thomas JA, Meirelles O, Jaetao JE, Benn D, Ruby SW, Veenhuis M, Madeo F, Werner-Washburne M. Isolation of quiescent and nonquiescent cells from yeast stationary-phase cultures. *J Cell Biol*. 2006 Jul 3;174(1):89-100.

    Impact factor: 10.8

45. Wissing S, Ludovico P, Herker E, **Büttner S**, Engelhardt SM, Decker T, Link A, Proksch A, Rodrigues F, Corte-Real M, Fröhlich KU, Manns J, Candé C, Sigrist SJ, Kroemer G, Madeo F. An AIF orthologue regulates apoptosis in yeast. *J Cell Biol*. 2004 Sep 27;166(7):969-74.

Impact factor: 10.8

46. Herker E, Jungwirth H, Lehmann KA, Maldener C, Fröhlich KU, Wissing S, **Büttner S**, Fehr M, Sigrist S, Madeo F. Chronological aging leads to apoptosis in yeast. *J Cell Biol.* 2004 Feb 16;164(4):501-7.

Impact factor: 10.8