Brigitte Pertschy

Head of Training Unit

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SCIENTIFIC & ACADEMIC CAREER

since 2023	Assistant professor, University of Graz, Austria
since 2014	*Venia docendi* (lecture qualification) in Molecular Biology and Biochemistry
since 2011	Research group leader at the University of Graz, Austria
2009-2011	Independent postdoctoral researcher at the University of Graz, Austria
2005-2009	Postdoctoral researcher at the University of Heidelberg, Germany
2001-2005	Ph.D. thesis, University of Graz, Austria
1995-2001	Studies of Microbiology, University of Graz, Austria

MAIN AREA OF RESEARCH

Brigitte Pertschy studies the mechanisms of eukaryotic ribosome biogenesis, applying genetic, biochemical and cell biological approaches, mainly using yeast as model system. Her work has illuminated the protective role of specialized chaperones in safeguarding newly synthesized ribosomal proteins on their assembly path, opening up a new research direction in the ribosome biogenesis field. Moreover, she has unveiled the pivotal role of small RNAs as facilitators of RNA folding in ribosome biogenesis. Ribosome biogenesis is a cornerstone of cellular proteostasis, intricately linked with metabolism and aging. In the course of the MetAGE project, Brigitte Pertschy aims to unravel the mechanisms through which the ribosome biogenesis pathway influences aging, and to investigate its interplay with other key proteostasis processes like autophagy. Furthermore, she seeks to explore the potential of inhibiting ribosome biogenesis as a novel strategy for anti-aging intervention.

ADDITIONAL RESEARCH ACTIVITIES *(10 most important)*

2011-present	Acquisition of 12 competitive third-party funded research grants (€ ~2.8 Mio)
Since 2016	Member of the curricula commission for Molecular Biology studies and member in the University senate, University of Graz
Since 2020	Principal investigator of the BioTechMed-Graz Flagship cooperation project DYNIMO

Selected Presentations

08/2022	“Novel assembly factors in early pre-60S particles maturation”; Ribosome Synthesis Meeting, Engelberg (Switzerland)
05/2021	“Rbp95, a novel ribosome assembly factor participating in early pre-60S maturation”, RNA Meeting (online)
08/2018	“Coordination of distant 40S ribosomal subunit maturation events”, Ribosome Synthesis Meeting, Orford (Canada)

Honors & Awards

2013	Elise Richter Senior Postdoc Fellowship for Women in Science (Austrian Science Fund)
2009	Hertha Firnberg Postdoc Fellowship for Women in Science (Austrian Science Fund)

2006 Erwin Schrödinger Fellowship Abroad (Austrian Science Fund)

2004 ÖGGGT Research Prize for Young Scientists, awarded by the Austrian Society for Genetics and Gene Technology (ÖGGGT)

10 MOST IMPORTANT PUBLICATIONS

1. Bhutada P, Favre S, Jaafar M, Hafner J, Liesinger L, Unterweger S, Bischof K, Darnhofer B, Siva Sankar D, Rechberger G, Abou Merhi R, Lebaron S, Birner-Gruenberger R, Kressler D, Henras AK, Pertschy B (2022). Rbp95 binds to 25S rRNA helix H95 and cooperates with the Npa1 complex during early pre-60S particle maturation. **Nucleic Acids Res.** 26:gkac724. doi: 10.1093/nar/gkac724.

2. Rössler I, Weigl S, Fernández-Fernández J, Martín-Villanueva S, Strauss D, Hurt E, de la Cruz J, Pertschy B (2022). The C-terminal tail of ribosomal protein Rps15 is engaged in cytoplasmic pre-40S maturation. **RNA Biol**. 19(1):560-574. doi: 10.1080/15476286.2022.2064073.

3. Mitterer V, Shayan R, Ferreira-Cerca S, Murat G, Enne T, Rinaldi D, Weigl S, Omanic H, Gleizes PE, Kressler D, Plisson-Chastang C, Pertschy B (2019). Conformational proofreading of distant 40S ribosomal subunit maturation events by a long-range communication mechanism. **Nat Commun**. 10(1):2754. doi: 10.1038/s41467-019-10678-z.

4. Awad D, Prattes M, Kofler L, Rössler I, Loibl M, Pertl M, Zisser G, Wolinski H, Pertschy B, Bergler H (2019). Inhibiting eukaryotic ribosome biogenesis. **BMC Biol**. 17(1):46. doi: 10.1186/s12915-019-0664-2.

5. Rössler I, Embacher J, Pillet B, Murat G, Liesinger L, Hafner J, Unterluggauer JJ, Birner-Gruenberger R, Kressler D, Pertschy B (2019). Tsr4 and Nap1, two novel members of the ribosomal protein chaperOME. **Nucleic Acids Res.** 47(13):6984–7002. doi: 10.1093/nar/gkz317.

6. Mitterer V, Gantenbein N, Birner-Gruenberger R, Murat G, Bergler,H, Kressler D, Pertschy B (2016). Nuclear import of dimerized ribosomal protein Rps3 in complex with its chaperone Yar1. **Sci Rep.** 6:36714. doi: 10.1038/srep36714.

7. Mitterer V, Murat G, Réty S, Blaud M, Delbos L, Stanborough T, Bergler H, Leulliot N, Kressler D, Pertschy B (2016). Sequential domain assembly of ribosomal protein S3 drives 40S subunit maturation. **Nat Commun** 7:10336. doi: 10.1038/ncomms10336.

8. Stanborough T, Niederhauser J, Koch B, Bergler H, Pertschy B (2014). Ribosomal protein S3 interacts with the NF-κB inhibitor IκBα. **FEBS Lett.** 588(5):659–664. doi: 10.1016/j.febslet.2013.12.034.

9. Koch B, Mitterer V, Niederhauser J, Stanborough T, Murat G, Rechberger G, Bergler H, Kressler D, Pertschy B (2012). Yar1 protects the ribosomal protein Rps3 from aggregation. **J Biol Chem.** 287(26): 21806–21815. doi: 10.1074/jbc.M112.365791.

10. Pertschy B, Schneider C, Gnädig M, Schäfer T, Tollervey D, Hurt E (2009). RNA helicase Prp43 and its co-factor Pfa1 promote 20 to 18S rRNA processing catalyzed by the endonuclease Nob1. **J Biol Chem.** 284(50): 35079–35091. doi: 10.1074/jbc.M109.040774.