

Curriculum Vitae – Prof. Dr. Harald Schwalbe

Personell Lab born 26.03.1966, married, two children
Institute of Organic Chemistry and Chemical Biology
Center for Biomolecular Magnetic Resonance (BMRZ)

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Education

1993-1995 Postdoctoral fellow at the Oxford Centre for Molecular Sciences, Oxford University
(Mentor: C.M. Dobson, FRS)

1990-1993 Chemistry, University of Frankfurt, Germany, Ph.D. (summa cum laude; Mentor: C. Griesinger)

1985-1990 Chemistry, University of Frankfurt, Germany, Diploma (summa cum laude; Mentor: C. Griesinger)

Professional Career

2024- Member of the DFG Fachkolleg "Structural Biology"

2022-2026 Coordinator of EU projects: R-NMR and Fragment-Screen

2022- Executive Director Instruct-ERIC

2020-2023 Coordinator of the global research alliance: Covid19-nmr

2019-2021 Representative of the Senate of Goethe University Frankfurt in "Hochschulrat"

2014- EU representative of Goethe University Frankfurt

2013-2017 Member of the Board of Directors: Cluster of Excellence: Macromolecular Complexes

2012-2018 Coordinator: DFG-funded Network of German NMR Centres

2012- Chairman of the Frankfurt section of the Society of German Chemists (GDCh)

2011-2023 Speaker: DFG-SFB 902: "Molecular principles of RNA-based regulation"

2011-2016 Chairman of the DFG panel: large equipment ("Apparateausschuß")

2009-2012 Speaker: DFG-Cluster of Excellence EXC115: "Macromolecular Complexes"

2009-2010 Member of the DFG panel: large equipment ("Apparateausschuß")

2007-2009 Speaker: DFG-SFB 579: "RNA-Ligand-Interactions"

2006-2008 Deputy director: DFG-Center of Excellence: Macromolecular Complexes

2005- Member of Senate of Goethe-University Frankfurt

2003-2014 Coordinator of 5 EU-funded programmes (STREPs, TOKs, Research Infrastructure for NMR (I3))

2002-2006 Managing Director of the Center for Biomolecular Magnetic Resonance, BMRZ

2003-2008 Head of the Department (Dekan) "Biochemistry, Chemistry and Pharmacy"

2002- Full Professor (C4), Institute for Organic Chemistry and Chemical Biology, University of Frankfurt

2001 Associate Professor for Biological Chemistry, Massachusetts Institute of Technology

1999-2001 Assistant Professor for Biological Chemistry, Massachusetts Institute of Technology

1995-1999 Work as Habilitand in Chemistry, University of Frankfurt (Mentor: C. Griesinger)

Honors and Awards

2022 Richard Ernst Award of EUROMAR

2015 Best PhD thesis advisor award, University Frankfurt.

2015 Szent-Györgyi Albert lecturer in Budapest

2014 "Scientist of the Year" of Kassel Foundation, University Frankfurt.

2012	Department Prize for Teaching, University Frankfurt
2006	1822-Prize for Teaching; University Frankfurt
2002-	Vertrauensdozent of the "Studienstiftung des deutschen Volkes"
2001	Pew Scholar for Biomedical Sciences, Fellow of the Alfred P. Sloan Foundation
2000	Karl Winnacker Preis of Aventis Foundation
1999	Gerhard Hess Preis of DFG
1996	Liebig Stipend of the Fonds der Chemischen Industrie
1993-1995	Human Capital and Mobility Fellow, EU.
1993	Studienabschlusspreis of the Fonds der Chemischen Industrie, Promotion
1989-1993	Member of the Graduate program: "Chemische und Biologische Synthese von Wirkstoffen", Institut für Organische Chemie, Frankfurt/Main.
1987-1990	Member of the "Studienstiftung des Deutschen Volkes"

Research Interests

Structural Biology of Proteins and RNA studied by NMR spectroscopy

Time-Resolved NMR spectroscopy

RNA Folding and Regulation

Protein Folding; non-native states of proteins

NMR-based drug design (kinases, phosphatases, GPCRs)

Synthesis of isotope labelled RNA, DNA, peptides and photolabile compounds

Member of Editorial Boards/Scientific Committees

ChemBioChem, Board of ISMAR (2002-2010), ICMRBS Council (2006-2016), Kuratorium des Strüngmann-Forums, Kuratorium der Rolf-Sammet-Stiftung, Kuratorium der Oswald- und Boris-Rajewski-Stiftung, Preiskommission der GDCh August-Wilhelm-von-Hofmann-Denkmünze (2009-2015), Preiskommission des Frankfurter Biophysikpreises der Oswald-Stiftung, Member of the „Wissenschaftliche Gesellschaft der Johann Wolfgang Goethe-Universität Frankfurt“, Kuratorium des „Centres for Dialogue“, Kuratorium der Angewandten Chemie.

Organization of Large International Conferences

2002 iLab: G-protein coupled receptors (together with G. Wess, Aventis)

2003 iLab: RNA targeting (together with G. Wess, Aventis, M. Göbel, Uni Frankfurt)

2004 iLab: Systems Biology challenges Chemistry (together with G. Wess, Aventis)

2007 ICMRBS Göttingen (co-organizer)

2009 GDCh Wissenschaftsforum Frankfurt (local organizer)

2011 EUROMAR Frankfurt (co-organizer), GDCh Wissenschaftsforum Bremen (scientific committee), International symposium of the German Society for Biochemistry and Molecular Biology (scientific committee)

2013 Elected Co-Chair Gordon Conference: Biopolymers

Scientific Advisory Boards

Center for Magnetic Resonance Florence, Henry Wellcome Center Birmingham, Frankfurt Institute for Advanced Studies (2005-2012), Saverna company, Spanish consortium for high field NMR.

Reviewing activity

DFG Germany, NWO Netherlands, FWO Austria, CNS France, Wellcome-Trust UK, BBSRC UK, National Science Foundation USA, NIH USA, Science Foundation Belgium, Excellence programme Slovenia, German Israel Foundation, Czech Science Foundation, Klaus-Tschira-Preis, DAAD, Czech Science Foundation, EPSRC UK, Novo Nordisk foundation. Accounts in Chemical Research, Angew. Chem. Int. Ed., Biochemistry, Bioorganic and Medicinal Chemistry, Biophysical J., ChemBioChem, ChemComm, Chemistry A European Journal, ChemPhysChem, Febs Lett., J. Am. Chem. Soc., J. Biomol. NMR, J. Chem. Theor. and Computation, J. Magn. Reson., J. Mol. Biol., J. Phys. Chem., Magnetic Resonance in Chemistry, Nature, Nucleic Acids Res., Plos One, Proc. Natl. Acad. Sci. USA, RNA, Science, Structure.

Publications and patent related to Covid19-nmr.de

- J. Vögele et al. (2024) Structure of an internal loop motif with three consecutive U•U mismatches from stem-loop 1 in the 3'-UTR of the SARS-CoV-2 genomic RNA. *Nucl. Acids Res.*, in press.
- T. Matzel, M. Wirtz Martin et al. (2024) NMR characterization and ligand binding site of the stem loop 2 motif (s2m) from the Delta variant of SARS-CoV-2. *RNA*, in press. doi: 10.1261/rna.079902.123
- N. Altincekic, N. Jores, et al. (2023) Targeting main protease (Mpro, nsp5) by growth of fragment scaffolds exploiting structure-based methodologies. *ACS Chem. Biol.* **19**, 563-574.
- D. Hymon, J. Martins, et al. (2023) NMR ^1H , ^{19}F -based screening of the four stem-looped structure 5_SL1-SL4 located in the 5'-untranslated region of SARS-CoV-2 RNA. *RSC Med. Chem.* **15**, 165-177.
- J. Vögele et al. (2023) High-resolution structure of stem-loop 4 from the 5'-UTR of SARS-CoV-2 solved by solution state NMR. *Nucl. Acids Res.*, in press. 10.1093/nar/gkad762.
- Europäische Patentanmeldung EP22151440.9, Molecules targeting viral rna and/or viral rna-protein complexes for use in the treatment of viral infections, in particular covid-19
- Y. Li et al. (2023) Crystal structure of the CoV-Y domain of SARS-CoV-2 nonstructural protein 3. *Sci Rep.* **13**, 2890.
- H. Berg, M. Wirtz-Martin, N. Altincekic et al. (2022) Comprehensive Fragment Screening of the SARS-CoV-2 Proteome Explores Novel Chemical Space for Drug Development. *Angew. Chem. Int. Ed. Engl.* **61**, e202205858.
- A.C. Tsika et al. (2022) Binding adaptation of GS-441524 diversifies macro domains and downregulates SARS-CoV-2 deMARylation capacity. *J. Mol. Biol.* **434**, 167720.
- J. Kim et al. (2022) The extended Hadamard transform: sensitivity-enhanced NMR experiments among labile and non-labile ^1H of SARS-CoV-2-derived RNAs. *ChemPhysChem* **23**, e202100704.
- K.R. Mertinkus, J.T. Grün et al. (2022) ^1H , ^{13}C , and ^{15}N Assignment of stem-Loops 5b+cf from the 5'-UTR of SARS-CoV-2. *Biomolecular NMR assignments*, 10.1007/s12104-021-10053-4.
- C. Richter, K. F. Hohmann et al. (2021) ^1H , ^{13}C , and ^{15}N Assignment of Stem-Loop SL1 from the 5'-UTR of SARS-CoV-2. *Biomolecular NMR assignments* **15**, 467-474.
- S. Sreeramulu, C. Richter et al. (2021) Exploring the druggability of conserved RNA regulatory elements in the SARS-CoV-2 genome. *Angew. Chem. Int. Ed. Engl.* **60**, 19191-19200.
- J. Vögele et al. (2021) ^1H , ^{13}C , ^{15}N and ^{31}P chemical shift assignment for stem-loop 4 from the 5'-UTR of SARS-CoV-2. *Biomolecular NMR assignments* **15**, 335-340.
- J. Kim et al. (2021) 3D Heteronuclear Magnetization Transfers for the establishment of secondary structures in SARS-CoV-2-derived RNAs. *J. Am. Chem. Soc.* **143**, 4942-4948 (JACS spotlight).
- F. E. Dudás et al. (2021) Backbone chemical shift spectral assignments of SARS coronavirus-2 non-structural protein nsp9. *Biomolecular NMR assignments* **15**, 235-241.
- Y. Wang et al. (2021) ^1H , ^{13}C , and ^{15}N backbone chemical-shift assignments of SARS-CoV-2 non-structural protein 1 (leader protein). *Biomolecular NMR assignments* **15**, 287-295.
- M. Novakovic et al. (2021) Magnetization transfer to enhance NOE cross-peaks among labile protons: Applications to imino-imino sequential walks in SARS-CoV-2-derived RNAs. *Angew. Chem. Int. Ed. Engl.* **60**, 11884-11891. (very important paper)

N. Altincekic, S.M. Korn, N.S. Qureshi, M. Dujardin, M. Ninot-Pedrosa et al. (2021) Large-scale recombinant production of the SARS-CoV-2 proteome for high-throughput and structural biology applications. *Frontiers in Molecular Biosciences* **29**, 1-6.

N. Salvi et al. (2021) ^1H , ^{13}C , and ^{15}N backbone chemical shift assignments of SARS-CoV-2 Nsp3a. *Biomolecular NMR assignments* **15**, 173-176.

R. Schnieders, S.A. Peters et al. (2021) ^1H , ^{13}C , and ^{15}N chemical shift assignments of the stem-loop 5a from the 5'-UTR of SARS-CoV-2. *Biomolecular NMR assignments* **15**, 302-211.

A. Gallo et al. (2021) ^1H , ^{13}C , and ^{15}N chemical shift assignments of the SUD domains of SARS-CoV-2 non-structural protein 3c: The N-terminal domain-SUD-N. *Biomolecular NMR assignments* **15**, 85-89.

A. Gallo et al. (2021) ^1H , ^{13}C , and ^{15}N chemical shift assignments of the SUD domains of SARS-CoV-2 non-structural protein 3c: "The SUD-M and SUD-C domains". *Biomolecular NMR assignments* **15**, 165-171.

S.M. Korn et al. (2021) ^1H , ^{13}C , and ^{15}N backbone chemical shift assignments of the C-terminal dimerization domain of SARS-CoV-2 nucleocapsid protein. *Biomolecular NMR assignments* **15**, 129-135.

S.M. Korn et al. (2020) ^1H , ^{13}C , and ^{15}N backbone chemical shift assignments of the nucleic acid-binding domain of SARS-CoV-2 non-structural protein 3e. *Biomolecular NMR assignments* **14**, 329-333.

F. Cantini et al. (2020) ^1H , ^{13}C , and ^{15}N backbone chemical shift assignments of the apo and the ADP-ribose bound forms of the macrodomain of SARS-CoV-2 non-structural protein 3b. *Biomolecular NMR assignments* **14**, 339-346.

A. Wacker, J.E. Weigand et al. (2020) Secondary structure determination of conserved SARS-CoV-2 RNA elements by NMR spectroscopy. *Nucl. Acids Res.* **48**, 12415-12435. (breakthrough paper).

N. Kubatova, N.S. Qureshi, N. Altincekic et al. (2020) ^1H , ^{13}C , and ^{15}N backbone chemical shift assignments of coronavirus-2 non-structural protein Nsp10. *Biomolecular NMR assignments* **15**, 65-71.

E. Duchardt-Ferner et al. (2023) Covid19-NMR consortium: A public report on the impact of this new global collaboration. *Angew. Chem. Int. Ed. Engl.* **62**, e202217171.

J. Adam et al. (2022) NMR-Spektroskopie: Auf der Suche nach Covid-Wirkstoffen. *Analyticapro*, S. 28.

A. Schlundt et al. (2020) Gemeinschaftlich in Krisenzeiten: NMR-Strukturbiologie gegen COVID-19. *BIOspektrum* **26**, 440-441.

J.E. Weigand et al. (2020) Strukturbiologie von SARS-CoV-2 mit NMR-Spektroskopie. *Nachrichten aus Chemie und Technik* **68**, 55-58.

Ten highlight publications

Protein Folding

J. Klein-Seetharaman, M. Oikawa, S.B. Grimshaw, J. Wirmer, E. Duchardt, T. Ueda, T. Imoto, L.J. Smith, C.M. Dobson, **H. Schwalbe** (2002) Long-range interactions within a non-native protein. *Science* **295**, 1719-1722.

F. Buhr, S. Jha, M. Thommen, J. Mittelstaet, F. Kutz, **H. Schwalbe***, M. Rodnina*, A. Komar* (2016) Synonymous codons direct co-translational folding towards different protein conformations. *Mol. Cell* **61**, 341-351.

L. Schulte, J. Mao, J. Reitz, S. Sreeramulu, D. Kudlinzki, V.V. Hodirnau, J. Meier-Credo, K. Saxena, F. Buhr, J.D. Langer, M. Blackledge*, A.S. Frangakis*, C. Glaubitz*, **H. Schwalbe*** (2020) Cysteine oxidation and disulfide formation in the ribosomal exit tunnel. *Nat. Commun.* **11**, 5569.

RNA Folding and Regulation

A. Reining, S. Nozinovic, K. Schlepckow, F. Buhr, B. Fürtig*, **H. Schwalbe*** (2013) Three-state mechanism couples ligand and temperature sensing in riboswitches. *Nature* **499**, 355-359.

H. Steinert, F. Sochor, A. Wacker, J. Buck, C. Helmling, F. Hiller, S. Keyhani, J. Noeske, S. Grimm, M.M. Rudolph, H. Keller, R.A. Mooney, R. Landick, B. Suess, B. Fürtig*, J. Wöhnert*, **H. Schwalbe*** (2017) Pausing guides RNA folding to populate transiently stable RNA structures for riboswitch-based transcription regulation. *eLife*, e21297.

C. Helmling, D. Klötzner, F. Sochor, R.A. Mooney, A. Wacker, R. Landing, B. Fürtig, A. Heckel*, **H. Schwalbe*** (2018) Life times of metastable states guide regulatory signaling in transcription riboswitches. *Nat. Commun.* **9**, 944.

A. Wacker, J.E. Weigand et al. (2020) Secondary structure determination of conserved SARS-CoV-2 RNA elements by NMR spectroscopy. *Nucl. Acids Res.* **48**, 12415-12435. (breakthrough paper).

Membrane Proteins

V. Zickermann, C. Wirth, H. Nasiri, K. Siegmund, **H. Schwalbe**, C. Hunte, U. Brandt (2015) Mechanistic insight from the crystal structure of mitochondrial complex I. *Science* **347**, 44-49.

NMR-based Drug Design

S. Sreeramulu, C. Richter et al. (2021) Exploring the druggability of conserved RNA regulatory elements in the SARS-CoV-2 genome. *Angew. Chem. Intl. Ed. Engl.* **60**, 19191-19200.

H. Berg, M. Wirtz-Martin, N. Altincekic et al. (2022) Comprehensive Fragment Screening of the SARS-CoV-2 Proteome Explores Novel Chemical Space for Drug Development. *Angew. Chem. Int. Ed. Engl.* **61**, e202205858.

List of Publications (peer-reviewed)

Reviews/editorials are listed separately at the end of the document

398 original contributions, 77 reviews and other articles, 5 patents

146 pdb entries (102 X-ray, 41 NMR, 3 cryo-EM), 98 bmrB entries

*shared corresponding authorship is indicated

2024

398. J. Vögele, E. Duchardt-Ferner, J.K. Bains, B. Knezic, A. Wacker, C. Sich, J. Weigand, J. Sponer, **H. Schwalbe**, M. Krepl, J. Wöhnert (2024) Structure of an internal loop motif with three consecutive U•U mismatches from stem-loop 1 in the 3'-UTR of the SARS-CoV-2 genomic RNA. *Nucl. Acids Res.*, in press.

397. T. Matzel, M. Wirtz Martin, A. Herr, A. Wacker, C. Richter, S. Sreeramulu, **H. Schwalbe** (2024) NMR characterization and ligand binding site of the stem loop 2 motif (s2m) from the Delta variant of SARS-CoV-2. RNA, in press. doi: 10.1261/rna.079902.123

396. N. M. Krause, J.K. Bains, J. Blechar, C. Richter, I. Bessi, P. Grote, M.S. Leisegang, R.P. Brandes*, **H. Schwalbe*** (2024) Biophysical investigation of RNA-DNA:DNA triple helix and RNA:DNA heteroduplex formation by the lncRNAs MEG3 and Fendrr. *ChemBioChem*, in press.

395. B. Lala, R. Chaudhuri, T. Prasanth, I. Burkhart, **H. Schwalbe**, J. Dash (2024) Guanosine-based hydrogel as a supramolecular scaffold for template-assisted macrocyclization. *Chem. Commun.* 60, 3433-3436.

394. J. Blechar, V. de Jesus, B. Fürtig, M. Hengesbach*, **H. Schwalbe*** (2024) Shine-Dalgarno accessibility governs ribosome binding to the adenine riboswitch. *ACS Chem. Biol.* **19**, 607-618.

393. X. Jalencas, H. Berg, L.O. Espeland, S. Sreeramulu, F. Kinnen, C. Richter, C. Georgiou, V. Yadrykhinsky, E. Specker, K. Jaudzems, T. Miletic, R. Harmel, P. Gribbon, **H. Schwalbe***, R. Brenk*, A. Jirgensons*, A. Zaliani*, J. Mestres* (2024) Design, quality and validation of the EU-OPENSREEN fragment library poised to a high-throughput screening collection. *RSC Med. Chem.*, in press.

392. N. Altincekic*, N. Jores, F. Löhr, C. Richter, C. Ehrhardt, M.J.J. Blommers, H. Berg, S. Öztürk, S.L. Gande, V. Linhard, J. Orts, M.J. Abi Saad, M. Bütikofer, J. Karderli, B.G. Karlsson, U. Brath, M. Hedenström, G. Gröbner, U.H. Sauer, A. Perrakis, J. Langer, L. Banci, F. Cantini, M. Fragai, D. Grifagni, T. Barthel, J. Wollenhaupt, M.S. Weiss, A. Robertson, A. Bax, S. Sreeramulu, **H. Schwalbe** (2024) Targeting main protease (Mpro, nsp5) by growth of fragment scaffolds exploiting structure-based methodologies. *ACS Chem. Biol.* **19**, 563-574.

391. M. Ugrina, I. Burkhart, D. Müller, **H. Schwalbe**, N. Schwierz (2024) RNA G-quadruplex folding is a multi-pathway process driven by conformational entropy. *Nucl. Acids Res.* **52**, 87-100.

2023

390. D. Üresin, D.J. Pyper, A. Borst, L. Hadjeres, R. Gelhausen, R. Backofen, C. Sharma, **H. Schwalbe**, J. Soppa (2023) Characterization of the zinc finger μ -protein HVO_0758 from *Haloferax volcanii*: biological roles, zinc binding, and NMR solution structure. *Frontiers in Microbiology* **14**, 120972.

389. I. Alshamleh, N. Kurrle, P. Makowka, R. Bhayadia, R. Kumar, S. Süsser, M. Seibert, D. Ludig, S. Wolf, S.E. Koschade, K. Stoschek, J. Kreitz, D.C. Fuhrmann, R. Toenges, M. Notaro, F. Comoglio, J.J. Schuringa, T. Berg, B. Brüne, D.S. Krause, J.-H. Klusmann, T. Oellerich, F. Schnütgen*, **H. Schwalbe***, H. Serve* (2023) PDP1 is a key metabolic gatekeeper and modulator of drug resistance in FLT3-ITD-positive acute myeloid leukemia. *Leukemia* **37**, 2367-2382.

388. D. Hyman, J. Martins, C. Richter, S. Sreeramulu, A. Wacker, J. Ferner, N. N. Patwarhan, A.E. Hargroove, **H. Schwalbe** (2023) NMR ^1H , ^{19}F -based screening of the four stem-looped structure 5_SL1-SL4 located in the 5'-untranslated region of SARS-CoV-2 RNA. *RSC Med. Chem.* **15**, 165-177.

387. J. Vögele, D. Hyman, J. Martins, J. Ferner, H.R.A. Jonker, A.E. Hargrove, A Wacker, **H. Schwalbe**, J. Wöhnert, E. Duchardt-Ferner (2023) High-resolution structure of stem-loop 4 from the 5'-UTR of SARS-CoV-2 solved by solution state NMR. *Nucl. Acids Res.* **51**, 11318-11331.
386. J. Kaur Bains, N. Qureshi, B. Ceylan, A. Wacker, **H. Schwalbe** (2023) Cell-free transcription-translation system – A dual read-out assay to characterize riboswitch function. *Nucl. Acids Res.* **51**, e82.
385. A. Oxenfarth, F. Kümmerer, S. Battaro, R. Schnieders, G. Pinter, H.R.A. Jonker, B. Fürtig, C. Richter, M. Blackledge, K. Lindorff-Larsen*, **H. Schwalbe*** (2023) Integrated NMR/Molecular Dynamics Determination of the Ensemble Conformation of a thermodynamically stable CUUG RNA tetraloop. *JACS* **145**, 16557-16572.
384. R. Tannenbergh, M. Paul, B. Röder, S.L. Gande, S. Sreeramulu, K. Saxena, C. Richter, **H. Schwalbe**, C. Swart, M.G. Weller (2023) Chemiluminescence Biosensor for the Determination of Cardiac Troponin I (cTNI). *Biosensors* **13**, 455.
383. B. Hargittay, K.S. Mineev, C. Richter, S. Sreeramulu, H.R.A. Jonker, K. Saxena, **H. Schwalbe** (2023) NMR Resonance Assignment of a Fibroblast Growth Factor 8 splicing isoform b. *Biomolecular NMR Assignment* **17**, 135-142.
382. T. Ali, S. Rogala, K.J. Bains, M.T. Melissari, S. Währisch, **H. Schwalbe**, B.G. Hermann, P. Grothe (2023) *Fendrr* synergizes with Wnt signalling to regulate fibrosis related genes during lung development via its RNA:dsDNA triplex element. *Nucl. Acids Res.* **51**, 6227-6237.
381. Y. Li, Y. Pustovalova, W. Shi, O. Gorbatyuk, S. Sreeramulu, **H. Schwalbe**, J.C. Hoch, B. Hao (2023) Crystal structure of the CoV-Y domain of SARS-CoV-2 nonstructural protein 3. *Sci Rep.* **13**, 2890.
380. J. T. Grün, J. Kim, S. Jayanthi, A. Lupulescu, E. Kupce, **H. Schwalbe**, L. Frydman (2023) Identifying and Overcoming Artifacts in ¹H-based Saturation Transfer NOE NMR Experiments. *J. Am. Chem. Soc.* **145**, 6289-6298.
379. A. Tröster, M. DiPrima, N. Jores, D. Kudlinzki, S. Sreeramulu, S.L. Gande, V. Linhard, D. Ludig, A. Schug, K. Saxena, M. Reinecke, S. Heinzlmeir, M.S. Wollenhaupt, F. Lennartz, M.S. Weiss, B. Kuster, G. Tosato*, **H. Schwalbe*** (2023) Optimization of the Lead Compound NVP-BHG712 as Colorectal Cancer Inhibitor. *Chemistry - a European Journal* **29**, e202203967.
378. M. Hutchison, G. Bellomo, A. Cherepanov, E. Stinal, B. Fürtig, C. Richter, V. Linhard, E. Gurewitsch, M. Lelli, N. Morgner, T. Schrader, **H. Schwalbe** (2023) Modulation of Ab42 aggregation kinetics and pathway by low molecular weight inhibitors. *ChemBioChem* **24**, e202200760.
377. A. Sudakov, B. Knezic, M. Hengesbach, B. Fürtig, E. Stinal, **H. Schwalbe** (2023) Site-Specific Labeling of RNAs with Modified and ¹⁹F-Labeled Nucleotides by Chemo-Enzymatic Synthesis. *Chemistry*, e202203368.
376. S. Kunert, V. Linhard, S. Weidrich, M. Choudalakis, F. Osswald, L. Krämer, A.R. Köhler, A. Bröhm, J. Wollenhaupt, **H. Schwalbe**, A. Jeltsch (2023) The MECP2-TRD domain interacts with the DNMT3A-ADD domain at the H3-tail binding site. *Protein Sci.* **32**, e4542.
375. A. V. Cherepanov*, **H. Schwalbe*** (2023) Large Temperature-Jump and Nanosecond Hyperquenching for Time-Resolved Structural Studies. *Chemistry Methods*, in press.

2022

374. M.S. Leisegang, J. Kaur Bains, S. Seredinski, L.A. Oo, N.M. Krause, C-C. Kuo, S. Günther, N.S. Cetin, T. Warwick, C. Cao, F. Boos, J.I. Ponce, S. Haydar, R. Bednarz, C. Valasarajan, D.C. Fuhrmann, J. Preussner, M. Looso, S.S. Pullamsetti, M.H. Schulz, H.R.A. Jonker, C. Richter, F. Rezende, R. Gilsbach, B. Pflüger-Müller, I. Wittig, I. Grummt, T. Ribarska, I.G. Costa, **H. Schwalbe***, R.P. Brandes* (2022) HIF1 α -AS1 is a DNA:DNA:RNA triplex-forming lncRNA interacting with the HUSH complex. *Nat. Commun.* **13**, 6563.

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