

# Curriculum vitae - Prof. Dr. Dominik Niopek



**Nationality:** German

**Personal status:** married, two daughters

**Date of birth:** 01 May 1987

**Place of birth:** Speyer, Germany

## **Education:**

- 27 June 2016 PhD in Biology (*summa cum laude*), Heidelberg University, Germany; thesis on *Optogenetic control of nucleocytoplasmic protein transport*
- Jan 2013 - June 2016 PhD student with Prof. Dr. Barbara Di Ventura and Prof. Dr. Roland Eils at the German Cancer Research Center (DKFZ) and BioQuant-Center
- 21 Dec 2012 M.Sc. degree in Molecular Biotechnology, thesis on *Spatiotemporal control of gene expression in mammalian cells using a light-dependent transgene system*
- 15 June 2009 B.Sc. degree in Molecular Biotechnology, thesis on *Directed evolution of a chimeric luxQ-tar chemotaxis receptor*
- Sept 2006 – Dec 2012 Student of Molecular Biotechnology at Heidelberg University, Germany
- 23 Mar 2006 High-school diploma (Abitur), Friedrich-Magnus-Schwerd Gymnasium, Speyer, Germany

## **Academic appointments and professional experience:**

- Since April, 2023 Full professor (W3) for Pharmaceutical Biology, Institute for Pharmacy and Molecular Biotechnology (IPMB) and Faculty of Engineering Sciences, Heidelberg University, Germany
- Oct 2020 – March 2023 Assistant Professor (W2), Biology of eukaryotic gene and genome regulation, Centre for Synthetic Biology, Technical University of Darmstadt
- Nov 2019 – April 2020 Visiting scholar, Harvard Medical school (Pamela Silver lab)
- Sept 2016 – Sept 2020 Junior group leader for Synthetic Biology at IPMB and at the Center for Quantitative Analysis of Molecular and Cellular Biosystems (BioQuant), Heidelberg University
- Jan 2013 – Aug 2016 PhD student/Employee at the German Cancer Research Center, Heidelberg
- 2007 – 2016 Various research assistant jobs at Max-Planck Institute for Medical Research, Heidelberg University and Heidelberg University hospital
- Sept – Nov 2009 Research visit at Boston University Medical School, Boston, USA; Prof. Dr. Richard A. Cohen
- 2012, 2013, 2017, 2021, 2023 Advisor/PI of student teams from Heidelberg/Darmstadt participating in the international genetically engineered machines competition, iGEM

### ***Awards and stipends:***

10 Jan 2022	ERC Starting Grant 2021 (~1.62 mio €)
1 Oct 2020	Life Sciences Bridge Award, Aventis Foundation (100,000 €)
13 Nov 2017	2nd runner up and 6 special prizes, iGEM competition, Boston, USA
9 Nov 2017	Ruprecht-Karls prize by „Stiftung Universität Heidelberg“ for the best PhD thesis in biosciences at Heidelberg University (3,000 €)
5 Oct 2017	KlarText prize for science communication by the Klaus Tschira foundation, Germany (5,000 €)
July 2015	Selected participant of the 65 <sup>th</sup> Lindau Nobel Laureate Meeting
07 Nov 2013	Winner of the iGEM competition, collegiate division with the project <i>Philosopher's Stone</i>
20 July 2012	Special award by the Faculty of Biosciences at the University of Heidelberg for exceptional student commitment (SynTheSys initiative)
30 June 2012	Winner of the iGEM competition, high-school division with the project <i>iGEMS- Unveil the Invisible</i>
2007 – 2012:	Scholarship by the German Academic Scholarship Foundation ( <i>Studienstiftung des deutschen Volkes</i> )
23 Mar 2006	Valedictorian (best high-school degree) at the Friedrich-Magnus-Schwerd Gymnasium, Speyer

### ***Referee for peer-reviewed journals and funding agencies***

Reviewer for ~15 science journals, including Nature Chemical Biology, Nature Machine Intelligence, Nature Communications, Science Advances, Nucleic Acids Research, ACS Synthetic Biology and different German and international funding agencies

### ***Professional responsibilities***

Current: Member of the Faculty for Engineering Sciences council  
Elected member of the study commissions Molecular Biotechnology and Pharmacy  
Personal tutor (*Vertrauensdozent*), German National Academic Foundation  
Past: Elected member of the ethics committee, Technical University of Darmstadt  
Elected Member of the Faculty council, Technical University of Darmstadt

### ***Professional memberships***

American Society of Cell and Gene Therapy  
German Association of Synthetic Biology  
German Academic Scholarship Foundation Alumni  
Heidelberg Life-Science lab Alumni

### ***Additional information***

Paternity leave, 3 months (March 22 – April 21, 2014; November 22, 2014 – January 21, 2015)

**10 most important publications (@: Co-corresponding authors)**

1. Bubeck F et al., and Niopek D (2018): Engineered anti-CRISPR proteins for optogenetic control of CRISPR/Cas9. *Nature Methods*. 15(11):924-927. doi.org/10.1038/s41592-018-0178-9
2. Mathony J et al., and Niopek D (2020): Computational design of anti-CRISPR proteins with improved inhibition potency. *Nature Chemical Biology*. 16(7):725-730. doi: 10.1038/s41589-020-0518-9
3. Mathony J, Aschenbrenner S, Becker P, Niopek D (2023): Dissecting the Determinants of Domain Insertion Tolerance and Allostery in Proteins. *Advanced Science*. 10(28):e2303496.
4. Aschenbrenner S et al., and Niopek D (2020): Coupling Cas9 to artificial inhibitory domains enhances CRISPR-Cas9 target specificity. *Science Advances*. 6(6):eaay0187. doi: 10.1126/sciadv.aay0187
5. Adam L et al., Niopek D@ and Kallenberger SM@. (2023): Transcriptomics-inferred dynamics of SARS-CoV-2 interactions with host epithelial cells. *Science Signaling*.16(804):eabl8266.
6. Hoffmann MD et al., and Niopek D (2021): Optogenetic control of *Neisseria meningitidis* Cas9 genome editing using an engineered, light-switchable anti-CRISPR protein. *Nucleic Acids Research*. 49(5):e29. doi: 10.1093/nar/gkaa1198.
7. Upmeier zu Belzen J et al., Niopek D@ and Eils R@ (2019): Leveraging Implicit Knowledge in Neural Networks for Functional Dissection and Engineering of Proteins. *Nature Machine Intelligence*. 1:225-235. doi.org/10.1038/s42256-019-0049-9
8. Hoffmann MD et al., and Niopek D (2019): Cell-specific CRISPR-Cas9 activation by microRNA-dependent expression of anti-CRISPR proteins. *Nucleic Acids Research*. gkz271. doi.org/10.1093/nar/gkz271
9. Niopek D et al., and Di Ventura B (2016): Optogenetic Control of Nuclear Protein Export. *Nature Communications*. 7:10624. doi: 10.1038/ncomms10624
10. Niopek D et al., and Di Ventura B (2014): Engineering light-inducible nuclear localization signals for precise spatiotemporal control of protein dynamics in living cells. *Nature Communications*. 5:5404. doi:10.1038/ncomms5404