Prof. Dr. Christian P.R. Hackenberger

born 04.02.1976 in Osnabrück
Humboldt Universität zu Berlin (HU)
Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP)
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Academic career

1996 – 1998	Undergraduate studies in Chemistry (Vordiplom)	Albert-Ludwigs-Universität Freiburg
1998 – 1999	Graduate studies and M.Sc. with Prof. Samuel H. Gellman	Univ. of Wisconsin/Madison, USA
2000 – 2003	Ph.D. research with Prof. Carsten Bolm (*summa cum laude*)	RWTH-Aachen
2003 – 2005	Postdoctoral work with Prof. Barbara Imperiali	Massachusetts Institute of Technology, USA
2004	Research stay with Prof. Sheena E. Radford	University of Leeds, UK
2005 – 2011	Liebig-Scholar (FCI) and Emmy-Noether-Group leader (DFG)	Freie Universität Berlin
2011	Habilitation and *venia legendi* in Organic Chemistry	Freie Universität Berlin
2011 – 2012	Associate Professor (W2) for Bioorganic Chemistry	Freie Universität Berlin
2012 –	Leibniz-Humboldt-Professur (W3) for Chemical Biology	Humboldt-Universität zu Berlin
2012 –	Department Head Chemical Biology	FMP

Research interests

- Next-generation biopharmaceuticals and bioconjugates (ADCs) against viral infections and cancer
- Engineering of cell-permeable proteins and antibodies
- Development of chemoselective and bioorthogonal reactions, P5-labeling
- Proteomic analysis of labile posttranslational modifications (pLys and pCys)
- Functional investigation of the Alzheimer-relevant Tau protein
- Engineering of antiviral protein-based multivalent scaffolds
- Sialic acid biosynthesis and metabolic oligosaccharide engineering

Honors and Awards

2023	Astra Zeneca Protein and Peptide Science Award (Royal Society of Chemistry, UK)
2023	Xiaoyu Hu Memorial Award (Chinese Peptide Society)
2020	Breakthrough of the Year-Award (Life Sciences), Falling Walls Foundation
2019	Novartis Lecture (New York University)
2018	Leonidas Zervas Award (European Peptide Society)
2018	Visiting Professor at the Leopold-Franzens Universität Innsbruck
2016	Fellow of the Royal Society of Chemistry
2010/12/14	Recognized as “Top 40 young German scientists under 40” (Capital)
2014	“The best 40 under 40 in Germany” (Welt am Sonntag)
2013	Harlan L. and Margaret L. Goering Visiting Professor of Chemistry (UW Madison/WI, USA)
2012	ORCHEM-Award of the GDCh
2011	Heinz-Maier-Leibnitz-Award of the DFG
2011	ADUC-Award of the GDCh
2011	Dozentenstipendium of the Fonds der chemischen Industrie (FCI) and the Aventis Foundation
2010	Award in the competition “Junior investigator of the year 2010”
2010	Plus 3-Award of the Boehringer-Ingelheim Foundation
2009	Award of the GDCh section “Macromolecular Chemistry” (FG Makromolekulare Chemie)
2008	Award of the Otto-Röhm Memorial Foundation
2006	Emmy-Noether-Group leader
2005	Liebig-Scholarship of the FCI
2005	Thieme-Journal Award
2003/2005	Postdoctoral Fellowship of the DAAD and DFG
2003	Borchers Medal and Friedrich-Wilhelm Preis (RWTH Aachen)
2001	Scholarship for scientific journalism of the FCI
2000/2001	Kekulé-Ph.D.-Scholarship of the FCI and of the Studienstiftung des deutschen Volkes
1998	Study-abroad Scholarship of the Universität Freiburg within the “Academic-Year-Programs”
1997	Scholarship of the Studienstiftung des deutschen Volkes

Further activities/memberships/commissions of trust

2024 – Member of Fachkollegium "Bioorganische Chemie und Lebensmittelchemie" (DFG)
2024 – Associate Editor Chemical Science (RSC)
2021 – Selection Committee GO-Bio Initial (BMBF)
2021 – Selection Committee PhD Scholarships Studienstiftung des deutschen Volkes
2020 – Selection Committee Research-Fellowships of the Alexander von Humboldt Foundation
2020 – 2023 Head of Selection Committee Albrecht Kossel Preis (GDCh)
2020 Co-Founder Tubulis GmbH
2019 – Member of the Editorial Advisory Board of Chemical Science and RSC Chemical Biology
2016 – Member of the Editorial Advisory Board of ChemBioChem (Wiley-VCh)
2015 – 2023 Associate Editor Organic and Biomolecular Chemistry (RSC)
2012 – Liaison professor (Vertrauensdozent) of the Studienstiftung des deutschen Volkes
2012 – 2019 Spokesman and Head of the DFG priority program (DFG Schwerpunktprogramm) SPP 1623
2012 – 2014 Member of the Advisory Board of Organic and Biomolecular Chemistry (RSC)
2011 – 2013 Head of the GDCh section in Berlin (Ortsverband Berlin)
2008 – Elected Member of the Max Bergmann Society, Germany
2008 – 2012 Spokesman and Head of the Research Training Group (Graduiertenkolleg) CRC 765
2007 – 2012 Member of the permanent advisory board of the Dahlem Research School
2002 – Member of the American Chemical Society (ACS)
2001 – Member of the GDCh
2001 Editorial office assistant and author at the WDR television (Wissenschaftsredaktion)

Selected third party funded research projects

2019 – 2028 Project within the Research Training Group "Peptide" RTG 2473/1 (DFG)
2024 – 2027 Project within the doctoral training network "Tau immune (TAME)" (HORIZON-MSCA, EU)
2023 – 2026 Project "Intrazelluläres Targeting von Tau-spezifischen Einzeldomänen-Antikörpern" (ANR/DFG)
2023 – 2026 Project C9 of the collaborative research center CRC 1349 (DFG) "Fluor-specific Interactions to improve the cellular uptake of proteins and conjugates in living cells"
2021 – 2024 Head of project consortium RTK-P5-ADC "Targeted Drug Delivery" (BMBF)
2021 – 2024 SprinD "MucBoost" (three funding phases)
2021 – 2024 Project C1 of the collaborative research center CRC 1449 (DFG) "Semi-synthetic approaches to probe mucin function" (DFG)
2020 – 2021 Board member "Corona Virus Pre Exploration Project" (Berlin University Alliance)
2018 – 2022 Project within the Leibniz Competition Program: Leibniz-Transfer "Cystein-selective bioconjugation for next generation antibody drug conjugates" (SAW)
2012 – 2019 Coordination of DFG priority program SPP 1623 (DFG)
2016 – 2018 Project "Chemoselective Staudinger-induced Michael-additions to antibodies to analyze protein homeostasis in C. elegans" within the DFG priority program 1623 (DFG)
2012 – 2018 Project "Site-specific functionalization of nanobodies: From labeling to cellular uptake"within the DFG priority program 1623 (DFG)
2008 – 2019 Project B5 of the collaborative research center CRC 765 (DFG), "Synthesis of multivalent ligand binding systems via chemoselective saccharide- and peptide-ligations" and "Site-specific functionalization of proteins for the acquisition of multivalent glycoconjugates"
2010 – 2015 "Plus 3"-Award (Boehringer-Ingelheim Stiftung), "Chemoselective Staudinger- reactions for the modification of peptides and proteins"
2008 – 2012 Head of Research Training Group in the CRC 765 (DFG) "Multivalency in chemistry and biochemistry"
2007 – 2010 Project BMBF-Glycobiotechnolye (BMBF), "Development of new cellular systems for the acquisition of diagnostic and therapeutic glycoproteins"
2006 – 2011 Emmy Noether Program (DFG), "New synthetic methods for naturally modified peptides and proteins, their structural evaluation and biological function"

Supervised scientists 2008-2024

20 Postdocs
33 Doctoral Candidates

Conference organization

2019	Emil-Fischer-Symposium in Berlin ”What would Emil Fischer do today?” (Head)
2019	8th Chemical Protein Synthesis Meeting in Berlin (Head)
2015/2017	5th and 7th Chemical Protein Synthesis Meeting in Vienna and Haifa (Board member)
2015	ECBS/ICBS "Chemical Biology" in Berlin (Board member)
2012/2014	4th and 5th Sion-German Conference “Frontiers of Chemistry” in Bejing and Berlin (Head)
2014	GDCh-Biochemistry Symposium “Bioorthogonal Chemistry” in Berlin (Head)
2012	4th Sion-German Conference “Frontiers of Chemistry” in Bejing (Board member)
2008	5th Emmy-Noether-Meeting in Chemistry 2008 at the FU Berlin (Head)
2006/2007	16th and 17th symposium “Bioorganische Chemie” for junior researchers (Head)

Selection of ten most important publications (out of 132, * corresponding author)

1. J.V.V. Arafiles, J. Franke, L. Franz, J. Gómez-González, K. Kemnitz-Hassanin, C.P.R. Hackenberger*, *J. Am. Chem. Soc.* **2023,** *DOI: 10.1021/jacs.3c05365*
   Cell-Surface-Retained Peptide Additives for the Cytosolic Delivery of Functional Proteins
2. C.E. Stieger, Y. Park, M.A.R. de Geus, D. Kim, C. Huhn, J.S. Slenczka, P. Ochtrop, J.M. Müchler, R. Süssmuth, J. Broichhagen, M.-H. Baik,* C.P.R. Hackenberger*,
   Angew. Chem. Int. Ed. **2022,** *61(41)*, e202205348
   DFT-Guided Discovery of Ethynyl-Triazolyl-Phosphinates as Modular Electrophiles for Chemoselective Cysteine Bioconjugation and Profiling
3. A.F.L. Schneider, M. Kithil, M.C. Cardoso, M. Lehmann, C.P.R. Hackenberger*
   Nature Chem. **2021,** *13*, 530-539
   Cellular uptake of Large Biomolecules Enabled by Thiol-reactive Cellpenetrating Peptide Additives
4. A.L. Baumann, S. Schwagerus, K. Broi, K. Kemnitz-Hassanin, C.E. Stieger, N. Trieloff, P. Schmieder, C.P.R. Hackenberger*
   J. Am. Chem. Soc. **2020,** *142(20),* 9544-9552
   Chemically induced vinylphosphonothiolate electrophiles for thiol-thiol bioconjugations
5. D. Lauster, S. Klenk, K. Ludwig, S. Nojoumi, S. Behren, L. Adam, M. Stadtmüller, S. Saenger, S. Zimmler, K. Hönzke, L. Yao, U. Hoffmann, M. Bardua, A. Hamann, M. Witzenrath, L.E. Sander, T. Wolff, A.C. Hocke, S. Hippenstiel, S. DeCarlo, J. Neudecker, K. Osterrieder, N. Budisa, R.R. Netz, C. Böttcher, S. Liese,* A. Herrmann,* C.P.R. Hackenberger*
   Nature Nanotech. **2020**, *15*, 373-379
   Phage capsid nanoparticles with defined ligand arrangement block influenza virus entry
6. M.-A. Kasper, A. Stengl, P. Ochtrop, M. Gerlach, T. Stoschek, D. Schumacher, J. Helma, M. Penkert, E. Krause, H. Leonhardt,* C.P.R. Hackenberger*
   Angew. Chem. Int. Ed. **2019**, *58(34)*, 11631-11636
   Ethynylphosphonamidates for the rapid and cysteine selective generation of efficacious Antibody-Drug-Conjugates
7. M.-A. Kasper, M. Glanz, A. Stengl, M. Penkert, S. Klenk, T. Sauer, D. Schumacher, J. Helma, E. Krause, C. Cardoso, H. Leonhardt, C.P.R. Hackenberger*
   Angew. Chem. Int. Ed. **2019**, *58(34)*, 11625-11630
   Cysteine-Selective Phosphonamidate Electrophiles for Modular Protein Bioconjugations
8. H.D. Herce,* D. Schumacher,* A.F.L. Schneider, A.K. Ludwig, F.A. Mann, M. Fillies, M.-A. Kasper, S. Reinke, E. Krause, H. Leonhardt, M.C. Cardoso,* C.P.R. Hackenberger*
   Nature Chem. **2017**, *9*, 762-771
   Cell-permeable nanobodies for targeted immunolabelling and antigen manipulation in living cells
9. D. Schumacher, O. Lemke, J. Helma, L. Gerszonowicz, V. Waller, T. Stoschek, P.M. Durkin, N. Budisa, H. Leonhardt, B.G. Keller, C.P.R. Hackenberger*
   Chemical Science **2017**, *8*, 3471-3478
   Broad substrate tolerance of tubulin tyrosine ligase enables one-step site-specific enzymatic protein labeling
10. J. Bertran-Vicente, M. Penkert, O. Nieto-Garcia, J.-M. Jeckelmann, P. Schmieder, E. Krause, C.P.R. Hackenberger*
    Nature Comm. **2016**, *7*, Article number: 12703
    Chemoselective synthesis and analysis of naturally occurring phosphorylated cysteine peptides