

Curriculum Vitae

Dr. S. J. Pomplun

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Date of birth: 15. Jun. 1985

Since Sept 2021	Tenure Track Assistant Professor Leiden at Leiden University Drug discovery – Novel Chemical Modalities
Jul – Aug 2021	Guest Scientist at Ludwig Maximilian University Munich German research foundation (DFG) fellowship
Jan 2019 – June 2021	PostDoc at the Massachusetts Institute of Technology (MIT) Boston, Pentelute Lab German research foundation (DFG) fellowship <i>Projects:</i> <i>Combinatorial discovery of nucleic acid binding molecules;</i> <i>De novo discovery of SARS-CoV-2 binding peptides;</i> <i>Synthesis of bioactive engineered transcription factor analogs;</i> <i>Cleavable linker development for catch and release applications.</i>
Sep 2015 – Nov 2018	PostDoc at Roche Diagnostic GmbH in Penzberg. R&D - Department of Chemistry - Rare Reagents <i>Projects:</i> <i>Development of antibody conjugation chemistry;</i> <i>Development of oligonucleotide labeling strategies;</i> <i>Design and synthesis of building blocks for oligonucleotide and peptide synthesis.</i>

Education

May 2012 – Aug 2015	Ph.D. in Organic and Medicinal Chemistry Summa cum Laude (October 14th, 2015) Max Planck Institute for Psychiatry/LMU (Munich, Germany) Supervisor: Prof. Dr. Hausch, Chemical Genomics Group Title Ph.D. Thesis: <i>Rational Design and Asymmetric Synthesis of a Bicyclic [4.3.1] Aza-Amide Ligand Library for FK506 Binding Proteins</i>
Sep 2005 – Jul 2011	Diploma in Chemistry and pharmaceutical technologies Final Mark: 110/110 University "La Sapienza" (Rome, Italy) Supervisor: Prof. Dr. Giancarlo Fabrizi Title Diploma Thesis: <i>New Palladium and Copper catalysed synthesis strategies for polysubstituted benzofuran ring systems</i>
Jul 2005	Majors in Science Final mark: 95/100 Liceo Scientifico Statale Cavour, (Rome, Italy)

Supervision and project leading

2020	Leading of a SARS-CoV-2 ligand discovery subgroup (3 Postdocs, 2 PhDs, 1 technician) <i>Department of Chemistry (Pentelute Group), Massachusetts Institute of Technology, USA</i>
2019	Leading of a cleavable linker subgroup (1 Postdocs, 2 PhDs, 1 undergraduate student) <i>Department of Chemistry (Pentelute Group), Massachusetts Institute of Technology, USA</i>
2019	Supervision/mentoring of one undergraduate student <i>Department of Chemistry (Pentelute Group), Massachusetts Institute of Technology, USA</i>

2017	Leading of a bioconjugation subgroup (2 Postdocs, 1 technician) <i>Rare reagents, Roche Diagnostics GmbH, Germany</i>
2014	Supervision/mentoring of one master student <i>Chemical genomics group, Max-Planck-Institute of Psychiatry, Germany</i>

Fellowships, awards, funding

2019-201	German Research Foundation (DFG), postdoctoral fellowship, Massachusetts Institute of Technology, USA; <i>Project: Aptamer templated peptide ligation (total funding ~170,000 EUR)</i>
2020	JACS article featured as journal front cover (https://pubs.acs.org/toc/jacsat/142/49)
2018	Roche Diagnostics GmbH, Technology Innovation Funding <i>Project: Development of functional building blocks for peptide, protein applications (total funding ~300,000 EUR)</i>

Languages

German	mother tongue
Italian	mother tongue
English	fluent
French	basic knowledge

Publications and patents

Peer reviewed articles Jürgen M. Kolos, **Sebastian Pomplun**,⁺ Benedikt Rieß, Patrick Purder, Andreas Voll, Stefanie Merz, Andreas Bracher, Christian Meyners, Vera Krewald, Felix Hausch; Subnanomolar FKBP-Inhibitors enabled by a single solvent-exposed methyl group; *Chemical Science*, **2021**, (+ these authors contributed equally)

Sebastian Pomplun,⁺ Muhammad Jbara,⁺ Carly Schissel, Ann Boija, Susanne Wilson Hawken, Isaac Klein, and Bradley L. Pentelute; Parallel automated flow synthesis of covalent protein complexes that inhibit MYC-driven transcription, *ACS Central Science*, **2021**, 7, 8, 1408–1418, highlighted as supplementary cover; (+ these authors contributed equally)

Muhammad Jbara,⁺ **Sebastian Pomplun**,⁺ Carly Schissel, Susanne Wilson Hawken, Jacob Rodrigues, Ann Boija, Isaac Klein, Richard Young, Stephen L. Buchwald and Bradley L. Pentelute; Engineering of bioactive transcription factors via flow synthesis and palladium crosscoupling; *JACS*, **2021**, 143, 30, 11788; (+ these authors contributed equally)

Sebastian Pomplun, Muhammad Jbara, Anthony J. Quartararo, Genwei Zhang, Joseph Brown, Yen-Chun Lee, Xiyun Ye, Stephanie Hanna and Bradley L. Pentelute; De Novo Discovery of High Affinity Peptide Binders for the SARS-CoV-2 Spike Protein; *ACS Central Science*, **2021**, doi.org/10.1021/acscentsci.0c01309

Sebastian Pomplun^{*}; Targeting the SARS-CoV-2-spike protein: from antibodies to mini-proteins and peptides; *RSC Med. Chem*, **2020**, (invited publication for a themed 'Emerging Investigators' issue), doi.org/10.1039/D0MD00385A (^{*}corresponding author)

Sebastian Pomplun, Zachary P. Gates, Genwei Zhang, Anthony J. Quartararo, and Bradley L. Pentelute; Discovery of nucleic acid binding molecules from combinatorial biohybrid nucleobase peptide libraries; *JACS*, **2020**, 2020, 142, 46, 19642–19651, (highlighted as front cover on December 9th 2020)

Sebastian Pomplun⁺, Christopher Shugrue⁺, Adeline Schmitt, Carly Schissel, Charlotte Farquhar, Bradley L. Pentelute; Secondary Amino Alcohols: Traceless Cleavable Linkers for Use in Affinity Capture and Release; *Angew. Chem. Int. Ed.* **2020**, 59, 11566–11572, (+ these authors contributed equally)

Sebastian Pomplun^{*}, Mohamed YH Mohamed, Tobias Oelschlaegel, Christian Wellner, Frank Bergmann; Efficient Pictet Spengler Bioconjugation with *N*-Substituted Pyrrolo Alanine Derivatives; *Angew. Chem. Int. Ed.*, **2019**, 58 (11), 3542; (**corresponding author*)

Sebastian Pomplun, Claudia Sippel, Andreas Hähle, Donald Tay, Kensuke Shima, Alina Klages, Can Murat Ünal, Benedikt Rieß, Hui Ting Toh, Guido Hansen, Ho Sup Yoon, Andreas Bracher, Peter Preiser, Jan Rupp, Michael Steinert and Felix Hausch; Chemogenomic profiling of human and microbial FK506-binding proteins; *J. Med. Chem.*, **2018**; 61 (8), pp 3660–3673

Xixi Feng, **Sebastian Pomplun**, Felix Hausch; Recent progress in FKBP ligand development; *Curr. Mol. Pharm.*, **2016**, 1, 27 -36

Sebastian Pomplun⁺, Y. Wang⁺, A. Kirschner, C. Kozany, A. Bracher, F. Hausch; Rational Design and Asymmetric Synthesis of Potent and Neurotrophic Ligands for FK506-Binding Proteins (FKBPs); *Ang. Chem. Int. Ed.*, **2015**, 54 (1), 345, (+ these authors contributed equally)

Serena Cuboni, Christian Devigny, Bastiaan Hoogeland, Andrea Strasser, **Sebastian Pomplun**, Barbara Hauger, Georg Höfner, Klaus T. Wanner, Matthias Eder, Armin Buschauer, Florian Holsboer, and Felix Hausch; Loratadine and Analogues: Discovery and Preliminary Structure-Activity Relationship of Inhibitors of the Amino Acid Transporter B(0)AT2; *J. Med. Chem.*, **2014**, 57 (22), 9473

Patents

[FILED] Angela N. Koehler, Christina Woo, Catherine Henry, Chia-Fu Chang, **Sebastian Pomplun**, and Brice Curtin; *HIGH-THROUGHPUT METHOD TO RAPIDLY ADD CHEMICAL MOIETIES TO A SMALL MOLECULE LIBRARY*, 2020, *Appl. No.*: 63/080,234

[FILED] Genwei Zhang, **Sebastian Pomplun**, Alexander Loftis, Xuyu Tan, Andrei Loas, Bradley Pentelute, SARS-COV-2 SPIKE PROTEIN BINDING PEPTIDES, 2020, U.S. Appl. No. 63/016,925

[GRANTED] **Sebastian Pomplun**, Yansong Wang, Matthias Bischoff, Felix Hausch; Diazabicyclo[4.3.1]decane derivatives for treatment of psychiatric disorders; EP3097103B1, US9914732B2

[PUBLISHED – PENDING] **Sebastian Pomplun**, Tobias Oelschlaegel, Frank Bergmann; A method for labelling aldehyde containing target molecules; Patent Pub. No. WO2018189214A1

[PUBLISHED – PENDING] **Sebastian Pomplun**, Simon Loibl, Frank Bergmann; Cleavable linker for peptide synthesis; WO2020030663A1

[PUBLISHED – PENDING] **Sebastian Pomplun**, Hannes Kuchelmeister, Christian Wellner, Frank Bergmann, Ian Chau, Peter Crisalli, Hannah Kallewaard-Lum, Hasham Saqib; A method for sequencing reaction with tagged nucleoside obtained via pictet spengler reaction; WO2018191389A1

[PUBLISHED – PENDING] **Sebastian Pomplun**, Frank Bergmann; HPLC free purification of peptides by the use of new capping reagents; WO2020144111A1

Peer review activity

Journals Nature Chemical Biology (Nature PG), ChemBioChem (Wiley), ChemMedChem (Wiley), Advanced Healthcare materials (Wiley), Chem Soc Rev (RSC), ChemComm (RSC), ACS Infectious diseases (ACS), ACS Analytical Chemistry (ACS), IJPR (Springer).

Selected talks and seminars

European Chemical Biology Symposium (ECBS 2021), (virtual event), May 27th, 2021, *Combinatorial de novo discovery of ligands for the SARS-CoV-2 spike protein and oncogenic RNA-hairpins. (Best oral presentation award)*

Merck – MIT Symposium, (MIT, Cambridge, MA, USA, virtual event), May 6th, 2021, *Combinatorial de novo discovery of ligands for the SARS-CoV-2 spike protein and oncogenic RNA-hairpins.*

Frontiers in Medicinal Chemistry 2021, (GDCh/Uni Darmstadt online event); March 9th, 2021; *Discovery of nucleic acid binding molecules from combinatorial biohybrid nucleobase peptide libraries.*

15th German Peptide Symposium 2021, (Wiley/Uni Marburg online event); March 4th, 2021; *Combinatorial de novo discovery of ligands for the SARS-CoV-2 spike protein and oncogenic RNA-hairpins.*

Biophysical Approaches to the Development of Therapies for Infectious Diseases; (Biophysical society online event); October 14th, 2020; *Design of peptide inhibitors of SARS-CoV-2 S protein-mediated fusion.*

Ludwig Maximilian University Munich; (research seminar); March 6th, 2020; talk title: *Synthetic evolution of biomolecules to generate nucleic acid binding biohybrids.*

Technical University Darmstadt; (research seminar); February 4th, 2020; *Functional building blocks for peptide and oligonucleotide synthesis.*

Max-Planck-Institute of Psychiatry; (career development symposium); May 11th, 2016; *Research between industry and academia.*