

# Jan Kretschmer

## Personal Data

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Status/Function:		Postdoctoral researcher
Scientific focus:		Development of responsive PET-MRI bimodal probes
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## Education and qualifications

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- 10.2016 – 12.2022      **Ph.D. student**  
Charles University, Faculty of Science, study program: Organic chemistry
- Ph.D. thesis: Synthesis of chelators for use in diagnostic imaging
- 06.2021 – 07.2021      Research collaboration with Prof. André F. Martins, Ph.D.  
Werner Siemens Imaging Center, University of Tübingen
- Development of PET-MRI bimodal probes.
- 10.2013 – 06.2016      **Master of Science**  
Charles University, Faculty of Science, study program: Organic chemistry
- Preparation and use of  $\alpha$ -alkylidene- $\beta$ -lactams in cross-metathesis
- 01.2015 – 06.2015      Erasmus+ program: Erasmus  
Chalmers University of Technology, Sweden
- 09.2010 – 06.2013      **Bachelor**  
Faculty of science, study program: Clinical and Toxicological Analysis
- Preparation of fluorophilic building blocks for constitutional dynamic systems.

## Work Experience

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- 01.2023 – present      **Postdoctoral researcher**  
Werner Siemens Imaging Center, University of Tübingen  
Group: Advanced Preclinical Metabolic Imaging and Cell Engineering  
Supervisor: Prof. André F. Martins, Ph.D.
- Development of responsive PET-MRI bimodal probes.
- 04.2016 – 12.2022      **Ph.D. student**  
Institute of Organic Chemistry and Biochemistry of the CAS  
Group: Coordination chemistry  
Supervisor: RNDr. Miloslav Poláček, Ph.D.

- Synthesis of chelators for use in diagnostic imaging.
  - Development of PET-MRI bimodal probes.
  - Synthesis, purification and characterization of small molecules, peptides, bio-conjugates for MRI, PET-MRI.
  - Writing of grant project proposals.
- 2016 - 2020      **R&D scientist, project manager**  
 MB Pharma
- Coordination of project for development of Collagenase activity test kit.
  - Design and execution of HPLC/HPLC-MS experiments for analysis and validation of novel drug preparations.
  - Writing of grant project proposals.
- 2017 - 2020      **R&D scientist**  
 Fagofarma
- Development of purification methods for bacteriophages.
  - Design and execution of HPLC methods for analysis of bacteriophage lysates.
- 2015 - 2017      **LEAN trainee**  
 Zentiva k.s.
- Optimization and standardization of pharmaceutical production processes:
  - Implementation of SMED approach on granulation and tableting lines.
  - Designing and execution of Q3D protocol for elemental Impurities.
- 09.2016      **Sanofi LEAN academy training 1**  
 Sanofi
- SMED, 5S, 5M, standardization

## Teaching Experience

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02.2022 – 06.2022      Organic chemistry seminar

## Additional Qualifications and Skills

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06.2019 – 12.2022      Accreditation Evaluator for the Ministry of Education Youth and Sports

01.2019 – 08.2021      Project Evaluator for the Technology Agency of the Czech Republic

Former member of the Student Chamber of the Academic Senate of the Faculty of Science, Charles University

Former member of the Disciplinary committee of the Faculty of Science, Charles University

Former member of the Development committee of the Faculty of Science, Charles University

Former member of the Social committee of the Charles University

## Publications

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**Kretschmer, J.**; David, T.; Dračínský, M.; Socha, O.; Jirak, D.; Vít, M.; Jurok, R.; Kuchař, M.; Císařová, I.; Polasek, M. Paramagnetic encoding of molecules. *Nat. Commun.* **2022**, 13, 3179.

Marek Humpl, Jiří Tauchman, Nikola Topolovčan, **Jan Kretschmer**, Filip Hessler, Ivana Císařová, Martin Kotora, and Jan Veselý, Stereoselective Synthesis of Ezetimibe via Cross-Metathesis of Homoallylcohols and  $\alpha$ -Methylidene- $\beta$ -Lactams *J. Org. Chem.*, **2016**, 81 (17) 7692–7699

PCT/CZ2020/050032(2020, pending) – **Kretschmer, J.**; Polasek, M. Cyclen based compounds, coordination compounds, peptides, pharmaceutical preparation, and use thereof

## Conferences and Courses attended

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| 2022 | 7th Barrande Bioscience meeting, Olomouc, Czech Republic. Poster presentation: Synthesis of paramagnetically encoded molecules with DO3A-Hyp building blocks |
| 2019 | World Molecular Imaging Congress, Montreal, Canada. Poster presentation: DO3A-Hyp: a new tool for synthesis of MRI probes and more                           |
| 2018 | World Molecular Imaging Congress, Seattle, USA. Poster presentation: Improving kinetic inertness of MRI probes to prevent gadolinium release                 |
| 2017 | HPLC symposium 2017, Jeju Island, South Korea. Poster presentation: HPLC techniques for quality control of collagenase production.                           |

## Research Grants and Fellowships

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| 2018 - 2022 | CONCOORD: Controlled coordination for new radiopharmaceuticals - GAUK 1608218. Principal Investigator. 16k€   |
| 2021        | Erasmus+ traineeship: Werner Siemens Imaging Center, Germany - Research collaboration with prof. André F. Martins, Ph.D. June-July 2021 Development of PET-MRI bimodal probes |