



KATERINA DVORAKOVA BENDOVA

RESEARCHER

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PROFILE

Ph.D. candidate and researcher at the Institute of Molecular and Translational Medicine, specializing in radiopharmacy and molecular imaging. Research focuses on the development and evaluation of radiolabelled compounds for molecular imaging, including *in vitro* characterization, preclinical *in vivo* imaging, and *ex vivo* biodistribution studies.

WORK EXPERIENCE

Research assistant / PhD student

2020-PRESENT

Institute of Molecular and Translational Medicine,
Palacký University Olomouc

Small Animal Imaging center

- Radiolabelling and quality control of compounds using ^{68}Ga , ^{67}Ga , ^{89}Zr , ^{18}F , and $^{99\text{m}}\text{Tc}$ (radio-HPLC, radio-iTLC)
- *In vitro* evaluation of radiolabelled compounds in bacterial and cell culture models
- Preclinical *in vivo* imaging using microPET/CT, SPECT/CT, and PET/MRI, including image processing and quantitative analysis

INTERNSHIP

06-08 2022

The Medical University of Innsbruck,
Department of Nuclear Medicine

- Training in cultivation and laboratory handling of *Aspergillus fumigatus*
- Isolation and chemical modification of fungal metabolites; characterization by HPLC and MALDI-TOF followed by radiolabelling

CERTIFICATES

Design of animal experiments and project proposals (Function D)

University of Veterinary Sciences Brno, Czech Republic
Article 9 Authorization (EU Directive 2010/63/EU)

EDUCATION

2020 - present

PALACKY UNIVERSITY OLOMOUC

- Ph.D. in Molecular and Translational Medicine
- Thesis: Multimodal imaging for *in vivo* testing of selected biomolecules

2014 - 2020

UNIVERSITY OF VETERINARY SCIENCES BRNO

- Doctor of Veterinary medicine

SKILLS

- Preclinical imaging: microPET/CT, SPECT/CT, PET/MRI
- Image processing and quantitative analysis (Fusion)
- Radiolabelling techniques
- *In vitro* microbial and cell culture assays
- Animal handling, including infectious and tumor models
- *Ex vivo* biodistribution studies

LANGUAGES

- Czech - native
- English - fluent
- Spanish - basics

PUBLICATIONS

- 2025 ■
1. **Kateřina Dvořáková Bendová**, Tanja Groll, Barbora Neužilová, Kristýna Krasulová, Zbyněk Nový, Falco Reissig, Katja Steiger, Melanie Boxberg, Elisabeth Eppard, Jan Wuestemann, Marián Hajdúch, Moritz Jesinghaus, Jakub Šimeček, Michael C. Kreissl, Miloš Petřík & Johannes Notni. PET/CT imaging of esophageal cancer targeting tumor cell specific $\alpha\beta 6$ -integrin expression. Eur J Nucl Med Mol Imaging 53, 607–618 (2025). <https://doi.org/10.1007/s00259-025-07408-7>
 2. **Katerina Dvorakova Bendova**, Kristyna Krasulova, Barbora Neuzilova, Marian Hajduch & Milos Petrik. New insights into radiolabelled siderophores for molecular imaging of bacterial infections. npj Imaging 3, 63 (2025). <https://doi.org/10.1038/s44303-025-00126-7>
 3. Giacomo Gariglio, Thomas Hasenöhl, **Katerina Bendova**, Zbyněk Nový, Christine Rangger, Kai Kummer, Bradley D. Smith, Barbara Matuszczak, Milos Petrik & Clemens Decristoforo. Novel dimeric dual-modality FAP-targeted agents with favorable tumor retention for image-guided surgery: a preclinical study. Eur J Nucl Med Mol Imaging (2025). <https://doi.org/10.1007/s00259-025-07626-z>
 4. Katarína Hajduová, **Kateřina Dvořáková Bendová**, Miloš Petřík, Martina Benešová-Schäfer, Martin Schäfer, Marián Hajdúch & Zbyněk Nový. Paving the way for future PSMA inhibitors: insights from comparative preclinical evaluations of structure modifications. EJNMMI radiopharm. chem. 10, 63 (2025). <https://doi.org/10.1186/s41181-025-00389-w>
 5. Martin Kraihammer, Hristo P. Varbanov, **Kateřina Dvořáková Bendová**, Miloš Petřík, Annie Yap, Giacomo Gariglio, Hubertus Haas, Clemens Decristoforo. Repurposing carboplatin-based Pt(IV)-deferoxamine conjugates for infection theranostics. Eur. J. Med. Chem. 301, 2026 (2025). <https://doi.org/10.1016/j.ejmech.2025.118216>
 6. **Katerina Dvorakova Bendova**, Kristyna Krasulova, Barbora Neuzilova, Miroslav Popper, Patrik Mlynarcik, Katarina Hajduova, Zbynek Novy, Marian Hajduch, Milos Petrik. Positron Emission Tomography Imaging of Acinetobacter baumannii Infection: Comparison of Gallium-68 Labeled Siderophores. ACS Infectious Diseases 11, 4 (2025). <https://doi.org/10.1021/acsinfecdis.4c00946>
- 2024 ■
7. Gariglio Giacomo, **Katerina Bendova**, Martin Hermann, Asta Olafsdottir, Jane K. Sosabowski, Milos Petrik, Elisabeth von Guggenberg, and Clemens Decristoforo. Comparison of Two Chelator Scaffolds as Basis for Cholecystokinin-2 Receptor Targeting Bimodal Imaging Probes. Pharm. 17, 12 (2024). <https://doi.org/10.3390/ph17121569>
 8. Rahul Deb, Marcelo D. T. Torres, Miroslav Boudný, Markéta Koběřská, Floriana Cappiello, Miroslav Popper, **Kateřina Dvořáková Bendová**, Martina Drabinová, Adelheid Hanáčková, Katy Jeannot, Miloš Petřík, Maria Luisa Mangoni, Gabriela Balíková Novotná, Marek Mráz, Cesar de la Fuente-Nunez, Robert Vácha. Computational Design of Pore-Forming Peptides with Potent Antimicrobial and Anticancer Activities. J. Med. Chem. 67, 16 (2024). <https://doi.org/10.1021/acs.jmedchem.4c00912>
 9. Andrzej Mular, Isabella Hubmann, Milos Petrik, **Katerina Bendova**, Barbora Neuzilova, Mario Aguiar, Patricia Caballero, Abraham Shanzer, Henryk Kozłowski, Hubertus Haas, Clemens Decristoforo, Elzbieta Gumienna-Kontecka. Biomimetic Analogues of the Desferrioxamine E Siderophore for PET Imaging of Invasive Aspergillosis: Targeting Properties and Species Specificity. J. Med. Chem. 67, 14 (2024). <https://doi.org/10.1021/acs.jmedchem.4c00887>
 10. Joanna Maria Mierzwicka, Hana Petroková, Leona Rašková Kafková, Petr Kosztzy, Jiří Černý, Milan Kuchař, Miloš Petřík, **Kateřina Bendová**, Kristýna Krasulová, Yaroslava Groza, Lucie Vaňková, Shiv Bharadwaj, Natalya Panova, Michal Křupka, Jozef Škarda, Milan Raška & Petr Malý. Engineering PD-1-targeted small protein variants

for in vitro diagnostics and in vivo PET imaging. J Transl Med 22, 426 (2024). <https://doi.org/10.1186/s12967-024-05210-x>

11. Kristyna Krasulova, Barbora Neuzilova, **Katerina Dvorakova Bendova**, Zbynek Novy, Miroslav Popper, Marian Hajduch & Milos Petrik. Preclinical characterisation of gallium-68 labeled ferrichrome siderophore stereoisomers for PET imaging applications. EJNMMI radiopharm. chem. 9, 20 (2024). <https://doi.org/10.1186/s41181-024-00249-z>
- 2023 ■ 12. **Katerina Bendova**, Vladislav Raclavsky, Radko Novotny, Dominika Luptakova, Miroslav Popper, Zbynek Novy, Marian Hajduch, and Milos Petrik. [⁶⁸Ga]Ga-Ornibactin for *Burkholderia cepacia* complex Infection Imaging Using Positron Emission Tomography. J. Med. Chem. 66, 11 (2023). <https://doi.org/10.1021/acs.jmedchem.3c00469>
- 2022 ■ 13. Falco Reissig, Kristof Zarschler, Zbynek Novy, Milos Petrik, **Katerina Bendova**, Daniela Kurfurstova, Jan Bouchal, Marie-Charlotte Ludik, Florian Brandt, Klaus Kopka, Marta Khoylou, Hans-Jürgen Pietzsch, Marian Hajduch, Constantin Mamat. Modulating the pharmacokinetic profile of Actinium-225-labeled macropa-derived radioconjugates by dual targeting of PSMA and albumin. Theranostics 12,17 (2022). <https://doi.org/10.7150/thno.78043>
14. Pavel Barta, Rajamanikkam Kamaraj, Monika Kucharova, Zbynek Novy, Milos Petrik, **Katerina Bendova**, Marian Hajduch, Petr Pavek, Frantisek Trejtnar. Preparation, In Vitro Affinity, and In Vivo Biodistribution of Receptor-Specific ⁶⁸Ga-Labeled Peptides Targeting Vascular Endothelial Growth Factor Receptors. Bioconjug. Chem. 33, 10 (2022).
- 2021 ■ 15. Sona Krajcovicova, Andrea Daniskova, **Katerina Bendova**, Zbynek Novy, Miroslav Soural and Milos Petrik. [⁶⁸Ga]Ga-DFO-c(RGDyK): Synthesis and Evaluation of Its Potential for Tumor Imaging in Mice. Int. J. Mol. Sci. 22, 14 (2021). <https://doi.org/10.3390/ijms22147391>
16. Matthias Misslinger, Milos Petrik, Joachim Pfister, Isabella Hubmann, **Katerina Bendova**, Clemens Decristoforo, and Hubertus Haas. Desferrioxamine B-Mediated Pre-Clinical In Vivo Imaging of Infection by the Mold Fungus *Aspergillus fumigatus*. J. Fungi 7, 9 (2021). <https://doi.org/10.3390/jof7090734>
17. Joachim Pfister, Milos Petrik, **Katerina Bendova**, Barbara Matuszczak, Ulrike Binder, Matthias Misslinger, Alexander Kühbacher, Fabio Gsaller, Hubertus Haas, and Clemens Decristoforo. Antifungal Siderophore Conjugates for Theranostic Applications in Invasive Pulmonary Aspergillosis Using Low-Molecular TAFC Scaffolds. J. Fungi 7, 7 (2021). <https://doi.org/10.3390/jof7070558>
18. Falco Reissig, David Bauer, Kristof Zarschler, Zbynek Novy, **Katerina Bendova**, Marie-Charlotte Ludik, Klaus Kopka, Hans-Jürgen Pietzsch, Milos Petrik, and Constantin Mamat. Towards Targeted Alpha Therapy with Actinium-225: Chelators for Mild Condition Radiolabeling and Targeting PSMA—A Proof of Concept Study. Cancers 13, 8 (2021). <https://doi.org/10.3390/cancers13081974>

AWARDS

1. **European Molecular Imaging Meeting (2025) - Award for best poster (Imaging of Infection section):**
Comparison of Ferrioxamine E and Ferrioxamine 2-5 for imaging of bacterial infection.
2. **Dean's prize for outstanding publication (2024) – Palacky University** for a publication: Biomimetic Analogues of the Desferrioxamine E Siderophore for PET Imaging of Invasive Aspergillosis: Targeting Properties and Species Specificity
3. **Czech Nuclear Medicine Society (2023) - for the best publication in basic research:** [^{68}Ga]Ga-Ornibactin for *Burkholderia cepacia* complex Infection Imaging Using Positron Emission Tomography.
4. **Dean's prize for outstanding publication (2023) – Palacky University** for a publication: [^{68}Ga]Ga-Ornibactin for *Burkholderia cepacia* complex Infection Imaging Using Positron Emission Tomography.
5. **Czech Nuclear Medicine Society (2021) – prize for best lecture** at the Student Day of Nuclear Medicine for a presentation: Use of ^{68}Ga -Ornibactin for the diagnosis of infections caused by bacteria from the *Burkholderia cepacia* complex.

ORAL AND POSTER CONFERENCE PRESENTATIONS

- 2025 ■
1. **Kateřina Dvořáková Bendová**, Giacomo Gariglio, Thomas Hasenöhrl, Zbyněk Nový, Christine Rangger, Kai Kummer, Bradley D. Smith, Barbara Matuszczak, Marián Hajdúch, Miloš Petřík and Clemens Decristoforo. Preclinical analysis of fap-targeting dual-modality tracers for PET/CT and near-infrared fluorescence imaging. Czech Annual Cancer Research meeting, Olomouc, Czech republic, 2025 (poster). Abstract available: *CACR abstract book 2025*, P84.
 2. **Kateřina Dvořáková Bendová**, Barbora Neužilová, Katarína Hajduová, Patrik Mlynářčík, Kristýna Krasulová, Clemens Decristoforo, Gianpaolo di Santo, Zbyněk Nový, Miloš Petřík. Diagnosis of microbial infections using radiolabelled siderophores. 4th annual meeting of the National Institute of Virology and Bacteriology, Kutna Hora, Czech Republic, 2025 (oral presentation). Abstract available: *Czech Chemical Society Symposium Series 2025*, 23, 4, P138.
 3. **Katerina Dvorakova Bendova**, Patrik Mlynarcik, Kristyna Krasulova, Barbora Neužilova, Katarina Hajduova, Milos Petrik. Preclinical PET imaging of *Klebsiella pneumoniae* infection using gallium-68 labeled siderophores. World Molecular Imaging Conference, Anchorage, Alaska, USA, 2025 (video oral presentation). Abstract available: WMIC 2025 online abstract book, ID: 365.
 4. **Katerina Dvorakova Bendova**, Barbora Neužilova, Andrzej Mular, Isabella Hubmann, Mario Aguiar, Patricia Caballero, Abraham Shanzer, Henryk Kozłowski, Hubertus Haas, Clemens Decristoforo, Elzbieta Gumienna-Kontecka and Milos Petrik. Ferrioxamine derivates for PET/CT imaging of bacterial infections. IMTM Reactor conference, Hrubá Voda, Czech republic, 2025 (oral presentation). Abstract available: *IMTM Abstract book 2025*, P32.
 5. **Katerina Dvorakova Bendova**, Tanja Groll, Barbora Neužilová, Kristýna Krasulová, Zbyněk Nový, Falco Reissig, Katja Steiger, Elisabeth Eppard, Marián Hajdúch, Jakub Šimeček, Michael C. Kreissl, Johannes Notni, Miloš Petřík. PET/CT imaging of esophageal carcinoma targeting the $\alpha v \beta 6$ integrin. 46rd Working Days of the Radiopharmaceutical Section, Olomouc, Czech republic, 2025 (oral presentation). Abstract available: *Nukleární medicína 2025*; 14(3), S2, P8.
 6. **Katerina Dvorakova Bendova**, Barbora Neužilova, Andrzej Mular, Isabella Hubmann, Mario Aguiar, Patricia Caballero, Abraham Shanzer, Henryk Kozłowski, Hubertus Haas, Clemens Decristoforo, Elzbieta Gumienna-Kontecka and Milos Petrik. Comparison of Ferrioxamine E and Ferrioxamine 2-5 for imaging of bacterial infection. European Molecular Imaging Meeting, Bilbao, Spain, 2025 (poster). Abstract available: *EMIM online abstract book 2025*, IMMU-034.
- 2024 ■
7. **Kateřina Dvořáková Bendová**, Miloš Petřík, Isabella Hubmann, Andrzej Mular, Barbora Neužilová, Mario Aguiar, Patricia Caballero, Abraham Shanzer, Henryk Kozłowski, Hubertus Haas, Clemens Decristoforo and Elzbieta Gumienna-Kontecka. Radioactive labeling and evaluation of siderophore derivatives for PET imaging of invasive aspergillosis. 45rd Working Days of the Radiopharmaceutical Section, Prague, Czech republic, 2024 (oral presentation). Abstract available: *Nukleární Medicína 2024*, vol. 13, supp. 2, P11.
 8. **Katerina Dvorakova Bendova**, Patrik Mlynarcik, Kristyna Krasulova, Barbora Neužilova, Marian Hajduch, Milos Petrik. Comparison of two perspective radiolabelled siderophores for imaging of *Acinetobacter baumannii* infection. European Molecular Imaging Meeting, Porto, Portugal, 2024 (poster). Abstract available: *EMIM online abstract book 2024*, IMMU-028.

- 2023 ■ 9. **Katerina Dvorakova Bendova**, Kristyna Krasulova, Barbora Neuzilova, Patrik Mlynarcik, Michaela Zappeova, Milos Petrik. Positron emission tomography imaging of *Klebsiella pneumoniae* infection using gallium-labelled siderophores. Czech Annual Cancer Research meeting, Olomouc, Czech republic, 2023 (poster). Abstract available: *CACR abstract book 2023*, P67.
10. **Katerina Dvorakova Bendova**, Michaela Zappeova, Kristyna Krasulova, Barbora Neuzilova, Patrik Mlynarcik, Milos Petrik. Positron emission tomography imaging of *Klebsiella pneumoniae* infection. 2nd annual meeting of the National Institute of Virology and Bacteriology, Kutna Hora, Czech Republic, 2023 (poster). Abstract available: *Czech Chemical Society Symposium Series 2023*, vol. 21, 5, P238.
11. **Katerina Dvorakova Bendova**, Michaela Zappeova, Patrik Mlynarcik, Kristyna Krasulova, Barbora Neuzilova, Milos Petrik. ⁶⁸Ga-labelled siderophores for imaging of *Klebsiella pneumoniae* infection. IMTM Reactor conference, Velke Karlovice, Czech republic, 2023 (oral presentation). Abstract available: *IMTM Abstract book 2023*, P15.
12. **Katerina Bendova**, Michaela Zappeova, Patrik Mlynarcik, Zbynek Novy, Miroslav Popper, Marian Hajduch, Milos Petrik. ⁶⁸Ga-siderophores for *Klebsiella pneumoniae* detection by positron emission tomography. European Association of Nuclear Medicine Meeting, Vienna, Austria, 2023 (poster). Abstract available: *European Journal of Nuclear Medicine and Molecular Imaging*, vol. 50, supp. 1, P462.
13. **Katerina Bendova**, Patrik Mlynarcik, Krasulova Kristyna, Barbora Neuzilova, Marian Hajduch, Milos Petrik. *Acinetobacter baumannii* infection imaging using radiolabelled siderophores and positron emission tomography. World Molecular Imaging Conference, Prague, Czech republic 2023 (poster). Abstract available: *2023 World Molecular Imaging Congress Program*, 27, P580.
- 2022 ■ 14. **Kateřina Bendova**, Vladislav Raclavský, Radko Novotný, Zbyněk Nový, Marián Hajdúch, Miloš Petřík. *Burkholderia cepacia* complex infection imaging using radiolabelled siderophores. 1st annual meeting of the National Institute of Virology and Bacteriology, Kutna Hora, Czech Republic, 2022 (poster). Abstract available: *Chemické listy 2022*, 20, P406.
15. **Katerina Bendova**, Vladislav Raclavsky, Radko Novotny, Zbynek Novy, Marian Hajduch, Milos Petrik. ⁶⁸Ga-Ornibactin for *Burkholderia cepacia* complex infection imaging using positron emission tomography. 20th European Symposium on Radiopharmacy & Radiopharmaceuticals, Verona, Italy, 2022 (oral presentation). Abstract available: *EJNMMI Radiopharmacy and Chemistry 2023*, 8, 11, OP33.
16. **Kateřina Bendová**, Zbyněk Nový, Marián Hajdúch, Vladislav Raclavský, Radko Novotný, Miloš Petřík. Positron emission tomography imaging of *Burkholderia cepacia* complex infection using gallium labelled ornibactin. IMTM Reactor conference, Velke Karlovice, Czech republic, 2022 (oral presentation). Abstract available: *IMTM Abstract book 2022*, P17.
17. **Kateřina Bendová**, Vladislav Raclavský, Radko Novotný, Zbyněk Nový, Marián Hajdúch, Miloš Petřík. Radioactively labeled siderophores for the diagnosis of infections caused by bacteria from the *Burkholderia cepacia* complex. 58th Nuclear Medicine Days, Czech Society of Nuclear Medicine, Olomouc, Czech republic, 2022 (oral presentation). Abstract available: *Nukleární medicína 2022*, 11 (3), P4 (supp. 2).
18. **Kateřina Bendová**, Martina Benešová, Martin Schäfer, Zbyněk Nový Z, Marián Hajdúch, Miloš Petřík. Preclinical research of radioactively labeled peptides for breast cancer imaging: Initial results. 43rd Working Days of the

Radiopharmaceutical Section, Straznice, Czech Republic, 2022 (oral presentation). Abstract available: *Česká a slovenská farmacie 2022*, 71, P167 (supp. 1).

2021

19. **Kateřina Bendová**, Vladislav Raclavský, Radko Novotný, Zbyněk Nový Z, Marián Hajdúch, Miloš Petřík. ⁶⁸Ga-Ornibactin for positron emission tomography imaging of bacteria from *Burkholderia cepacia* complex. OL4PERMED, Olomouc, Czech republic, 2021 (oral presentation). Abstract available: *OL4PERMED Abstract book 2021*, P13.
20. **Kateřina Bendová**, Václav Raclavský, Radko Novotný, Zbyněk Nový Z, Marián Hajdúch, Miloš Petřík. Radiolabelled siderophores for the diagnosis of *Burkholderia cepacia* complex infections. IMTM Reactor conference, Lisek, Czech republic, 2021 (oral presentation). Abstract available: *IMTM Abstract book 2021*, P21.
21. **Kateřina Bendová**, Václav Raclavský, Radko Novotný, Zbyněk Nový Z, Marián Hajdúch, Miloš Petřík. Use of ⁶⁸Ga-Ornibactin for the diagnosis of infections caused by bacteria from the *Burkholderia cepacia* complex. Student Day of Nuclear Medicine, CTU, Prague, Czech republic, 2021 (oral presentation). Abstract available: *Nuklearni medicína 2021*; 10(4), S2, P4.