

## ASSOC.-PROF. WOLFGANG WADSAK, PHD

\* 18. July 1972 (in Vienna, Austria)

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### BIOSKETCH

Dr. Wolfgang Wadsak, an associate professor for medicinal radiochemistry at the Medical University of Vienna, Austria, has founded and led a research group dealing with PET radiopharmaceuticals throughout the last 2 decades. This resulted in the publication of more than 200 manuscripts in peer-reviewed journals and several book chapters on that topic. His research group is comprising of multi-discipline multi-level scientists, joint by their efforts in radiotracer development and preclinical testing. After graduating from Gymnasium Stubenbastei in Vienna in 1990, he completed his civil service at a local paramedics association. Then, Dr. Wadsak started his studies in chemistry at the University of Vienna and graduated as a master of science in 1999 with distinction. During his PhD thesis, entitled "Evaluation of fluoroethylations using fluorine-18 for the preparation of PET radiopharmaceuticals", he started to work cooperatively at the General Hospital of Vienna / Medical University of Vienna. In 2004, he finished his doctorate and graduated as a PhD with distinction. In parallel (2003/04), he also completed a post-graduate course in Radiopharmaceutical Sciences at the Universities in Frankfurt (Germany), ETH Zurich (Switzerland) and Leipzig (Germany) and was subsequently recognized as a certified radiopharmacist by the EANM.

In 2005, Dr. Wadsak successfully completed his education in radiation protection and became the official radiation protection agent for several facilities and entities at the General Hospital / Medical University of Vienna (e.g. Research Labs and PET – Department of Nuclear Medicine; Radiopharmacy – Hospital Pharmacy of the General Hospital; Preclinical Imaging Lab – Department of Biomedical Imaging and Image-guided Therapy). In 2009, he passed his habilitation in Medicinal Radiochemistry and was awarded with the *venia docendi* by the Medical University of Vienna. He continued the tenure track as assistant professor, completed a 4-month scientific internship at ETH Zurich, one of the world's top academic institutions in the field, and was promoted into the rank of an Associate Professor in 2012.

In 2015, Assoc.-Prof. Wolfgang Wadsak joined the Board of Directors in the Austrian Society for Nuclear Medicine and Molecular Imaging (OGNMB) and was appointed Secretary/Treasurer in 2016. In the same year, he founded the Alliance for the Promotion of the Radiopharmaceutical Sciences together with his colleague and close friend Prof. Markus Mitterhauser and joined the "Center for Biomarker Research in Medicine" (CBmed), a research center of excellence funded by the Austrian government with its HQ in Graz. There, he took over the coordination of all Vienna based activities as well as the lead in the Area "Data & Technologies". This encompasses diverse wet-lab techniques (e.g. NGS, metabolomics, immunology assays and digital pathology) and data-driven approaches to enrich biomarker discovery, validation and translation.

In 2018, together with Prof. Markus Hartenbach, he founded the Vienna based MINUTE medical Ltd. In 2019, he was appointed Secretary/Treasurer within the Board of the European Association of Nuclear Medicine (EANM).

In 2021, the international and collaborative COMET module project *microONE* ([www.microone.at](http://www.microone.at)) was approved by the FFG and Wolfgang Wadsak was appointed to be its managing director (2022-2025).

Wolfgang Wadsak is married and father of four child

## RESEARCH FOCUS

- ✧ Development and preclinical testing of PET radioligands specific for specific protein targets in the CNS
- ✧ Cross-validation of omics-biomarkers with in-vivo molecular imaging
- ✧ Development of novel PET tracers targeting immune checkpoint pathways
- ✧ Mechanistic studies on different ways of radiosyntheses (e.g. vessel-based, microwave,  $\mu$ -fluidics)

## SCIENTIFIC EDUCATION

<b>2011</b>	4-month scientific internship at ETH Zurich, Switzerland
<b>2009</b>	Postdoctoral thesis („Habilitation“; Medicinal Radiochemistry), Medical University of Vienna
<b>2003-2004</b>	Post-graduate diploma in Radiopharmaceutical Chemistry, ETH Zurich/ Universities of Frankfurt and Leipzig
<b>2000-2004</b>	PhD study (Radiochemistry), University of Vienna
<b>1991-1999</b>	Master study in Chemistry, University of Vienna

## OCCUPATION

<b>Since 2022</b>	Managing Director microONE, CBmed GmbH (Center for Biomarker Research in Medicine; Graz)
<b>Since 2017</b>	Scientific Leader – Area 1 (Data & Technologies), CBmed GmbH (Center for Biomarker Research in Medicine; Graz)
<b>Since 2016</b>	Coordinator of all Vienna Activities, Projects and Labs, CBmed GmbH (Center for Biomarker Research in Medicine; Graz)
<b>Since 2016</b>	Safety confidant (“Sicherheitsvertrauensperson”)
<b>Since 2012</b>	Associate Professor for Medicinal Radiochemistry, Head of Medicinal Radiochemistry and Biomarker Development Unit, Medical University of Vienna
<b>2010-2012</b>	Assistant Professor, Radiochemistry and Biomarker Development Unit, Medical University of Vienna
<b>2009-2010</b>	Senior Post-Doc, Medical University of Vienna
<b>Since 2009</b>	Lector in “Physiology and Pathology for Functional Imaging 1” at the University of applied sciences Wiener Neustadt (Master course “MedTech”)
<b>Since 2005</b>	Radiation protection officer (“Strahlenschutzbeauftragter”) – Radiochemistry Labs, Radiopharmacy, Psychiatry and Preclinical Imaging Lab (PIL)
<b>Since 2005</b>	Lector for “Medicinal Radiochemistry 1+2” at the University of Vienna
<b>2004-2014</b>	Trainer and consultant for Bayer AG ( <i>formerly</i> Schering AG), Vienna - $^{90}\text{Y}$ -Zevalin for radioimmunotherapy
<b>Since 2003</b>	Lector in “Radiopharmacy” at the academy for radiology technologists in Vienna (now: University of Applied Sciences, Vienna)
<b>Since 2001</b>	Production Manager for PET Radiopharmaceuticals, Department of Nuclear Medicine, Medical University of Vienna
<b>2001-2009</b>	University assistant, Medical University of Vienna
<b>1999-2001</b>	PhD student and research fellow, Department of Nuclear Medicine, Medical University of Vienna

## AWARDS

<b>2006 &amp; 2008</b>	THP Award for Basic Sciences in Nuclear Medicine
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- 2004** Winner of the Scholarship „Dr. Pfeiffer-Stipendium“, Austrian Society for Nuclear Medicine and Molecular Imaging (OGN)  
**1997 & 1998** Scholarship for extraordinary achievements, University of Vienna

### **SOCIETIES/ALLIANCES**

- 2019-2023** Secretary/Treasurer of the European Association of Nuclear Medicine (EANM)  
**2016-2023** Secretary/Treasurer of the Austrian Society for Nuclear Medicine and Molecular Imaging (OGNMB)  
**Since 2016** Director of the „Alliance for the Promotion of the Radiopharmaceutical Sciences“ (“Bündnis zur Förderung der radiopharmazeutischen Wissenschaften” BÜFraWi)  
**2015-2018** Auditor of the European Association of Nuclear Medicine (EANM)  
**2013-2022** Head of the “Development of Imaging Probes”-Node within the Medical Imaging Cluster (MIC) @MedUni Vienna  
**Since 2009** Full member in the European Association of Nuclear Medicine (EANM)  
**Since 2005** Full member in the Society of Radiopharmaceutical Sciences (SRS)  
**Since 2003** Full member in the Austrian Society for Nuclear Medicine and Molecular Imaging (OGNMB)

### **EDITORIAL BOARDS**

- Since 2018** Editorial Board *Pharmaceuticals*

### **GRANTS**

- From 2022** Managing Director microONE, CBmed GmbH (Center for Biomarker Research in Medicine; Graz)  
**From 2017** PI of COMET K1 Centre CBmed Projects 2.8 and 2.21 (total volume: >2.2M€)  
**From 2016** Co-PI of the WWTF grant # CS15-033 (total volume: >600k€)  
**From 2015** Co-PI of the EU Eurostars-2 grant #E!9669 ATRI (national funding agency: FFG; total volume: >1.4M€)  
**2002-2007** Project manager for the project #8263 (Jubilaumsfonds of the Austrian Federal Bank; total volume: >35k€)  
**Since 2007** Project manager of >10 industry sponsored research projects (total volume: >750k€)  
**Since 2003** Co-investigator in multiple Austrian Science Fund, Austrian Federal Bank or industry sponsored projects (total volume: >4.1M€)

### **INTERNATIONAL COOPERATIONS**

- ✧ **ETH Zurich**  
Center for Radiopharmaceutical Sciences; Zurich, Switzerland
- ✧ **University of Tuebingen**  
Division for preclinical imaging and radiopharmacy; Tuebingen, Germany
- ✧ **Memorial Sloan Kettering Cancer Center (MSKCC)**  
Molecular Imaging & Nanotechnology Center; New York City, NY, USA
- ✧ **Azerbaijan National Centre of Oncology (NCO)**  
Nuclear Medicine; Baku, Azerbaijan

### **LECTURES & TEACHING**

- 2020-** Lector in “Biochemistry” at the University of applied sciences Wiener Neustadt (Master course “MedTech”)  
**2018-** Lector in “Radiation Protection Basics” at the University of applied sciences Wiener Neustadt (Master course “MedTech”)  
**2017-** Lector in “CLINS Basic Lecture” at the Medical University of Vienna (PhD program Clinical Neurosciences)  
**2009-2019** Lector in “Physiology and Pathology for Functional Imaging 1” at the University of applied sciences Wiener Neustadt (Master course “MedTech”)  
**2006-2011** Lector for specific scientific module 1 (SSM1) at the Medical University of Vienna

- 2005-2019** Lector for “Medicinal Radiochemistry 1” and “Medicinal Radiochemistry 2 – Tracer for NeuroImaging” at the University of Vienna
- 2003-2020** Lector in “Radiopharmacy” at the academy for radiology technologists in Vienna (now: University of Applied Sciences, Vienna)

## PUBLICATIONS

- ✧ *key figures (as of NOV 2022, Scopus)*
- ✧ 239 total peer-reviewed publications
- ✧ >5000 cites
- ✧ h-factor: 37

## SELECTED PUBLICATIONS

- [1] **Wadsak W**, Mitterhauser M, Rendl G, Schuetz M, Mien LK, Ettliger DE, Dudczak R, Kletter K, Karanikas G. [<sup>18</sup>F]FETO for adrenocortical PET imaging: a pilot study in healthy volunteers. *Eur J Nucl Med Mol Imaging* 2006; 33: 669-672.
- [2] **Wadsak W** and Mitterhauser M. Basics and principles of radiopharmaceuticals for PET/CT. *Eur J Rad* 2010; 73:461-469.
- [3] Pichler V, Berroterán-Infante N, Philippe C, Vracka C, Klebermass EM, Balber T, Pfaff S, Nics L, Mitterhauser M, **Wadsak W**. An Overview of PET Radiochemistry, Part 1: The Covalent Labels <sup>18</sup>F, <sup>11</sup>C, and <sup>13</sup>N. *J Nucl Med* 2018;59:1350-1354.
- [4] Pfaff S, Philippe C, Pichler V, Hacker M, Mitterhauser M, **Wadsak W**. Microfluidic <sup>68</sup>Ga-labeling: A proof of principle study. *Dalton Transactions* 2018;47:5997-6004.
- [5] Pfaff S, Nehring T, Pichler V, Cardinale J, Mitterhauser M, Hacker M, **Wadsak W**. Development and evaluation of a rapid analysis for HEPES determination in <sup>68</sup>Ga-radiotracers. *EJNMMI Research*. 2018;8:95.
- [6] Lanzenberger RR, Mitterhauser M, Spindelegger C, **Wadsak W**, Klein N, Mien LK, Holik A, Attarbaschi T, Mossaheb N, Sacher J, Geiss-Granadia T, Kletter K, Kasper S, Tauscher J. Reduced serotonin-1A receptor binding in social anxiety disorder. *Biol Psych* 2007; 61: 1081-1089.
- [7] Hahn A, **Wadsak W**, Windischberger C, Baldinger P, Höflich A, Losak J, Nics L, Philippe C, Kranz G, Kraus C, Mitterhauser M, Karanikas G, Kasper S, Lanzenberger R. Differential modulation of the default mode network via serotonin-1A receptors. *Proc Natl Acad Sci* 2012; 109:2619-24.
- [8] Grubmüller B, Baltzer P, Hartenbach S, D’Andrea D, Helbich TH, Haug AR, Goldner GM, **Wadsak W**, Pfaff S, Mitterhauser M, Balber T, Berroteran-Infante N, Grahovac M, Babich J, Seitz C, Kramer G, Susani M, Mazal P, Kenner L, Shariat SF, Hacker M, Hartenbach M. PSMA ligand PET/MRI for primary prostate cancer: Staging performance and clinical impact. *Clin Cancer Res* 2018;24:6300-6307.
- [9] Haug AR, Leisser A, **Wadsak W**, Mitterhauser M, Pfaff S, Kropf S, Wester HJ, Hacker M, Hartenbach M, Kiesewetter-Wiederkehr B, Raderer M, Mayerhoefer ME. Prospective non-invasive evaluation of CXCR4 expression for the diagnosis of MALT lymphoma using [<sup>68</sup>Ga]Ga-Pentixafor-PET/MRI. *Theranostics* 2019;9:3653-3658.
- [10] Grubmüller B, Senn D, Kramer G, Baltzer P, D’Andrea D, Grubmüller KH, Mitterhauser M, Eidherr H, Haug AR, **Wadsak W**, Pfaff S, Shariat SF, Hacker M, Hartenbach M. Response assessment using <sup>68</sup>Ga-PSMA ligand PET in patients undergoing <sup>177</sup>Lu-PSMA radioligand therapy for metastatic castration-resistant prostate cancer. *Eur J Nucl Med Mol Imaging* 2019;46:1063-1072.
- [11] Rasul S, Hacker M, Kretschmer-Chott E, Leisser A, Grubmüller B, Kramer G, Shariat S, **Wadsak W**, Mitterhauser M, Hartenbach M, Haug AR. Clinical outcome of standardized <sup>177</sup>Lu-PSMA-617 therapy in metastatic prostate cancer patients receiving 7400 MBq every 4 weeks. *Eur J Nucl Med Mol Imaging* 2020;47:713-720.
- [12] Hendrikse H, Kiss O, Kunikowska J, **Wadsak W**, Decristoforo C, Patt M. Eur J Nucl Med Mol Imaging. EANM position on the in-house preparation of radiopharmaceuticals. 2022 Mar;49(4):1095-1098. doi: 10.1007/s00259-022-05694-z.
- [13] Limberger T, Schleder M, Trachtová K, Garces de Los Fayos Alonso I, Yang J, Högler S, Sternberg C, Bystry V, Oppelt J, Tichý B, Schmeidl M, Kodajova P, Jäger A, Neubauer HA, Oberhuber M, Schmalzbauer BS, Pospisilova S, Dolznig H, **Wadsak W**, Culig Z, Turner SD, Egger G, Lagler S, Kenner L. KMT2C

methyltransferase domain regulated INK4A expression suppresses prostate cancer metastasis. *Mol Cancer*. 2022 Mar 30;21(1):89. doi: 10.1186/s12943-022-01542-8.

- [14] Sigurdardottir HL, Kranz GS, Rami-Mark C, James GM, Vanicek T, Gryglewski G, Berroterán-Infante N, Kautzky A, Hienert M, Traub-Weidinger T, Mitterhauser M, **Wadsak W**, Hartmann AM, Hacker M, Rujescu D, Kasper S, Lanzenberger R. Association of norepinephrine transporter methylation with in vivo NET expression and hyperactivity-impulsivity symptoms in ADHD measured with PET. *Mol Psychiatry*. 2021 Mar;26(3):1009-1018. doi: 10.1038/s41380-019-0461-x.
- [15] Rischka L, Vranka C, Pichler V, Rasul S, Nics L, Gryglewski G, Handschuh P, Murgaš M, Godbersen GM, Silberbauer LR, Unterholzner J, Wotawa C, Haider A, Ahmed H, Schibli R, Mindt T, Mitterhauser M, **Wadsak W**, Hahn A, Lanzenberger R, Hacker M, Ametamey SM. First-in-Humans Brain PET Imaging of the GluN2B-Containing N-methyl-d-aspartate Receptor with (R)-11C-Me-NB1. *J Nucl Med*. 2022 Jun;63(6):936-941. doi: 10.2967/jnumed.121.262427.
- [16] Kulterer OC, Pfaff S, **Wadsak W**, Garstka N, Remzi M, Vranka C, Nics L, Mitterhauser M, Bootz F, Cazzamalli S, Krall N, Neri D, Haug AR. A Microdosing Study with 99mTc-PHC-102 for the SPECT/CT Imaging of Primary and Metastatic Lesions in Renal Cell Carcinoma Patients. *J Nucl Med*. 2021 Mar;62(3):360-365. doi: 10.2967/jnumed.120.245530.
- [17] Philippe C, Klebermass EM, Balber T, Kulterer OC, Zeilinger M, Egger G, Dumanic M, Herz CT, Kiefer FW, Scheuba C, Scherer T, Fürnsinn C, Vranka C, Pallitsch K, Spreitzer H, **Wadsak W**, Viernstein H, Hacker M, Mitterhauser M. Discovery of melanin-concentrating hormone receptor 1 in brown adipose tissue. *Ann N Y Acad Sci*. 2021 Jun;1494(1):70-86. doi: 10.1111/nyas.14563.
- [18] Moreira AP, Jamar F, Ozcan Z, Piciu D, Als C, Franceschi M, Trägårdh E, Zagar I, Sowa-Staszczak A, Cachin F, Bennink R, Forrer F, Adamsen TC, Fotopolous A, Kalnina M, Jensen LT, Mussalo H, Simanek M, Garcia-Cañamaque L, Nazarenko S, Mihailovic J, Bar-Sever Z, O'Connell M, Miladinova D, Graham R, Giubbini R, Kaliská L, Rozić D, Krause BJ, Gallowitsch HJ, Györke T, Sediene S, Rummyantsev P, **Wadsak W**, Kunikowska J. Impact of the COVID-19 pandemic on nuclear medicine departments in Europe. *Eur J Nucl Med Mol Imaging*. 2021 Oct;48(11):3361-3364. doi: 10.1007/s00259-021-05484-z.
- [19] Graham R, Moreira AP, Glaudemans AWJM, Jensen LT, Mihailovic J, Nazarenko S, Ozcan Z, Piciu D, **Wadsak W**, Kunikowska J, Jamar F. 2022 follow-up: impact of the COVID-19 pandemic on nuclear medicine departments in Europe. *Eur J Nucl Med Mol Imaging*. 2022 Aug;49(10):3309-3315. doi: 10.1007/s00259-022-05881-y.