



Dr. rer. nat. Chrysoula Vraka, MSc, Bakk.rer.nat.

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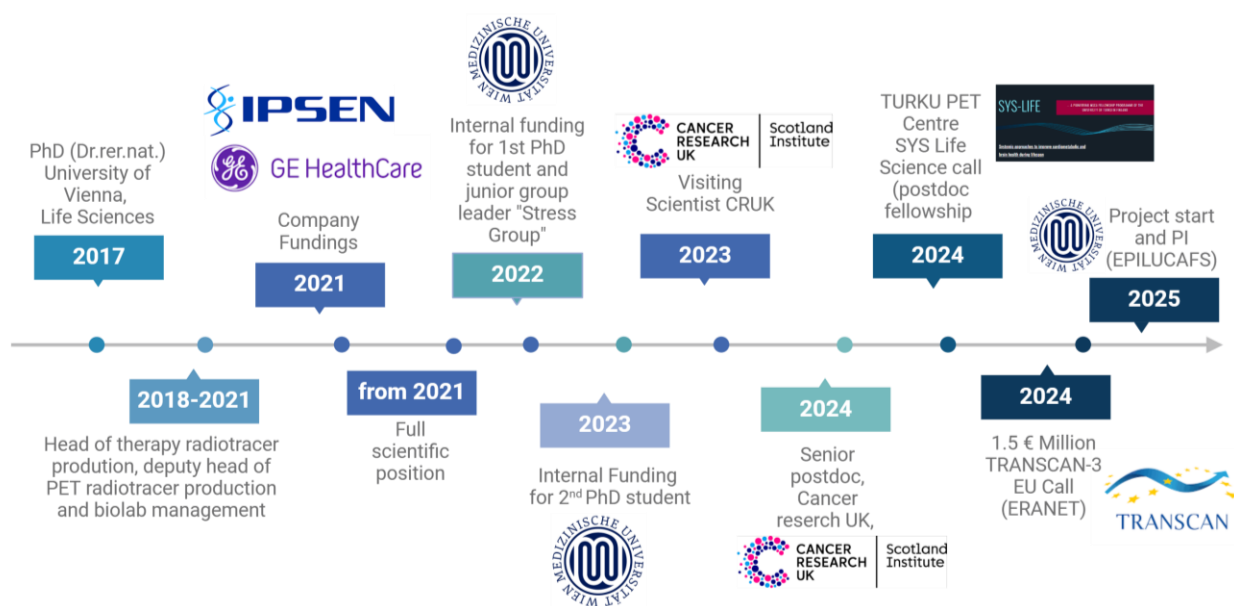
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Pager: 81-3363



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My main research focus was to understand the pharmacokinetic properties of radiotracers and drugs to accelerate and improve the process of drug development in neuroscience, infection and inflammation as well as cancer from bench-to-bed. With this background, my current and future work will encompass whole body tracer pharmacokinetics and imaging with special focus on organ axes between lymphoid organs and disease location: Currently, I am performing image-based metabolic phenotyping of KRAS driven lung cancer mouse models using positron emission tomography (PET). To overcome poor spatial resolution of PET, I have established a radioactive cell sorting technique (radioFlow) with the aim of understanding immune cell metabolism and metabolite competition within the tumour microenvironment (TME) and lymphoid organs in cancer. Using total PET body information of the TME and lymphatic organs, combined with molecular biology techniques, a further objective is to investigate the role of immune metabolism in tumour heterogeneity and progression and the contribution of immune cell dynamics to it. Additionally, I have established different mouse stress models to investigate external factors and how chronic mental stress contributes to poor immune surveillance, patient outcome, prognosis and the effect on immunotherapy response. Within the next three Years, I will investigate in an international consortium (TRANSCAN-3: EPILUCAFs) epigenetic drivers of cancer-associated fibroblasts in chronic stress and immunosuppression in lung cancer. As junior PI in Vienna, I am leading a team of 2 PhD students, which will be expanded in April 2025 for one more PhD student and a technician. Additionally, and during my time of scientific leave from the MUV, I am an associated scientist at the Scotland Institute, Cancer Research UK (CRUK) to deepen my knowledge in immune-metabolism and molecular techniques and establishing collaboration within this renowned institute. In my free time, I actively participate in various scientific societies and have contributed to organizing educational events and conferences. I am particularly proud to be a founding and board member of GRPW, where I am responsible for promoting the next generation of radiopharmaceutical scientists.





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EDUCATION & EMPLOYMENT HISTORY

Principal Investigator (EPILUCAFS) Start 1. April 2025- 2028

Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna (MUV), Austria

Visiting Scientist & senior postdoc, 10/2023-03/2024 & 05/2025-08/2025

Cancer Research UK (CRUK) Scotland Institute, Glasgow, Scotland

Affiliate Status with University of Glasgow, Molecular Imaging Group (R07, David Y Lewis)

University Assistant (postdoc position), 10/2020 – (currently on scientific leave) & **Junior Group Leader (Stress Group)** 2022- current (25% MUV)

Department of Biomedical Imaging and Image-guided Therapy,

Division of Nuclear Medicine (Medical University of Vienna (MUV), Austria (Head: Prof. Marcus Hacker)

Core team member of Experimental Nuclear Medicine (Head: Prof. Cécile Philippe)

Section Head of Radiopharmacy and Experimental Nuclear Medicine (Bio Labs) and deputy head of PET productions, 01/2018-09/2020

Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna (MUV), Austria

Production manager of therapy radiotracers 09/2016-12/2017

Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna (MUV), Austria

Dr.rer.nat./PhD Studies & Scientific Staff, 04/2013 – 12/2017

Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Austria & University of Vienna, Faculty of Life Sciences, Austria

Field: Radiopharmacy/ Life Sciences

Thesis title: "Predictive in vitro methods in experimental nuclear medicine: Blood Brain Barrier Penetration"

Reviewer: Prof. Frank Rösch and Prof. Bernd Neumaier

Laboratory Tutor (2013-2017)

Nutritional Sciences, Faculty of Life Sciences, University of Vienna, Vienna, Austria

Course Lecturer: Prof. Karl-Heinz Wagner

Personal Assistant of Prof. Knasmüller, 12/2011-04/2013

Institute of Cancer Research, MUV, Vienna, Austria

Scientific Writing, Editing & Schedule planning

Master Studies (MSc), 10/2010 – 03/2013

University of Vienna, Faculty of Life Sciences, Vienna, Austria

Field: Nutritional Sciences & Radiopharmacy /Life Sciences

engl. Title: „The Impact of Metabolites and the Lipophilicity on the Availability of the Parent Compound at the Target Area “

Bakk.rer.nat., 10/2006 – 06/2010

University of Vienna, Faculty of Life Sciences, Vienna, Austria

Field: Nutritional Sciences /Life Sciences

Thesis title: "Expenditure in the Austrian Health Care System- Diet-related Diseases" Basic Subjects: Health care system, diabetes, obesity, costs"



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FUNDING & AWARDS

Grants

„Chronic stress and immunosuppression in lung cancer: focus on epigenetic drivers in cancer-associated fibroblasts” Acronym: EPILUCAFS

TRANSCAN-3 (PIN5320023)

<https://transcan.eu/output-results/funded-projects/epiluafs.kl>

<https://www.fwf.ac.at/forschungsradar/10.55776/PIN5320023>

Total project funding € 1,479,070.83 (personally allocated for the project € 371,057.00)

Project start: 01. April 2025

Project Partners/PIs

Karin Tarte, Institute national de la santé et de la recherche médicale, Rennes Cedex, France

Jordi Alcaraz, University Barcelona, Barcelona, Spain

Noemi Reguart, Institute d'Investigacions Biomèdiques August Pi i Sunyer - Hospital Clínic de Barcelona Barcelona, Spain

Fatima Mechta-Grigoriou, Institute Curie, Paris, France

Chang-Shen Lin, Kaohsiung Medical University, Kaohsiung, Taiwan

Awards & Prizes

EANM NexGen, EANM 2024, Hamburg//EANM Young Authors Award 2023// SRS 2023 Video-Challenge Winner (Hot Atom Fond, Dr. Welch Foundation)// Rudolf-Hoefer-Award 2023 (2nd Best Publication 2022)// Rudolf-Hoefer-Award 2022 (4th Best Publication 2021)// Allgemeiner Förderungspreis Nuklearmedizin der OGNMB 2022 (Best Publication 2021)// Bursary Award ISRS (2017 & 2019)

TEACHING & Supervision and Mentoring.....

Teaching

Lectures at Medical University of Vienna (MUV) & University of Vienna (UniVie) and Fachhochschule Wiener Neustadt (FHNW) since 2020

Hands-On Nuklearmedizin: Einblick in endokrinologische/onkologische reale Fälle und die tägliche Routine im AKH (771.401) // Basic Seminar: Imaging Probes (861.037) // Thesis Seminar: Imaging Probes (861.038) // Journal Club: Round Table Imaging Technologies (861.039) // Medicinal Radiochemistry II (270041) // Radiopharmacy (B.RTEC.V.22) // SSM1: Von der Idee bis zur Umsetzung: Radiopharmaka-Entwicklung - ein Einblick in die Nuklearmedizin (803043) // SSM 2 - Wie schnell metabolisiert ein Arzneistoff?(806118) // SSM 3-Projektstudie (Wahlpflichtteil, 808004) // Research Club der Nuklearmedizin und Freunde (771009) // Basic and Thesis Seminar: Insights into Radiotracer Development (861911 & 861912)

Supervision and mentoring

PhD students (Junior Supervisor):

Maximilian Krisch, (Medical Imaging N094)

Supervisor (Senior): Prof. Marcus Hacker

Öykü Özer, (Immunology UN094)

Supervisor (Senior): Prof. Thomas Beyer & Thomas Weichhart

Diploma students (Supervisor or co-Supervisor):

Ralitsa Tervelova Zhivova, & **Theresa Patsch**, (Medicine, clinical)



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Other Bachelor and Master Students (UniVie and FHWN): more than 20 supervisions in Biology, Chemistry, Biomedical Imaging, and radiotechnology

PERSONAL, CAREER & EDUCATIONAL DEVELOPMENT (selection).....

Women of influence program (2024- current) // FFG Fit4FUNding YOUR TRAINING ON EU FUNDING (2020) // "schrittweise"-Curriculum, Medical University of Vienna (2014/15) // Teaching Center courses (2020& 2022) // Summer School, ConISyM- Converging Imaging and Systems Medicine, Castle Ringberg, Germany (2019)

CONTRIBUTION TO KNOWLEDGE AND UNDERSTANDING.....

Peer Reviewed Publications

Total 62 Publications (Appendix I), 71% in top Q1 Journals

First & Last author 12 publications (1 equally shared first-authorship)

Collaboration: 40% documents co-authored with researcher in other countries/regions

Topics

Radiopharmacy, chemistry, PET tracer development, brain imaging, small animal imaging, preclinical evaluation and clinical studies (cancer and neuro), first-in-human study, cancer cachexia, lung cancer, oncology, nuclear medicine

Sum of times cited (Scopus) 570

h-index (Scopus) 12

ORCID iD <https://orcid.org/0000-0003-2065-6093>

Author ID, Scopus 55368425100

Reviewer Scientific Reports, Cancers, Journal of Medicinal Chemistry, Cancers Discovery

Scientific Community Services and Activities (highlights)

Founding member of SRS-Think Tank (2018) and pre-conference organization of SRS Society of Radiopharmaceutical Sciences meeting in 2019, 2022 and 2023// Abstract reviewer for different conferences (iSRS, AGRR & EMIM)// Founding and board member of grpw (radiopharmaceutical sciences society of German speaking area)// Member of DGN// Member of RMP// Member of Member of OGNM// Member of AGRR// Member of iSRS 2014-2025

Science Communication:

Conference Contributions

More than 30 participations with oral and poster presentations in national and international conferences

Invited Talks (selection)

Workshop Drittmittelanträge- vom Brainstorming zum fertigen Antrag, LMU Klinikum München, 14.-15. März 2025, Germany

Young Molecular Imaging Community UK (y-micuk), British Pre-EMIM Meeting 2024, highlight lecture "My Journey to Become an Independent Academic", 1st March 2024, Glasgow, Scotland



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Turku PET Centre (online), "Imaging metabolic perturbation: [^{18}F]FDG- a robust marker for chronic stress", 6th November 2023, Turku, Finland

2nd Spatial Austria Day, "A lung cancer Pet-Imaging study in combination with TME analysis using spatial transcriptomics" SO/Vienna Hotel, 13th December 2022, Vienna Austria

Presymposium iSRS 2022, Workshop 1 "Chemical strategies to build multimodal imaging agents: a focus on PET/optical imaging agents and hyperpolarized tracers" 29th May 2022, Nantes, France

CME Session "Bloody Hell Bloody Hell!!!! Impact on Quantitation of Blood Radiotracer Measurements", EANM 2020 (Vienna/Virtual), 19th October 2020, Vienna, Austria