

Curriculum Vitae

Dr. Peter M Pichler



SUMMARY

Graduate M.D. program at the Medical University of Vienna: all three parts completed with distinction, dissertation in systems biology on biological programs with distinction. Doctorate program in Analytical Chemistry at the University of Vienna (spare-time, ongoing).

Concert piano at the Anton Bruckner Private University (final exam with distinction). Graduate program in electronics at the Technical University of Vienna (partially completed).

Work experience research: 27 publications in peer-reviewed journals, of these 6 as first author or shared first author, in addition 2 publications as first author in non peer-reviewed journals. Numerous presentations and talks at international conferences and congresses. FWF grant TRP 308-N15 (approved sum 349847 Euro, contributed most relevant part of the text and of the scientific concept). Collaboration with Astute Medical in discovery project of protein biomarkers for early detection of Acute Kidney Injury. Physician investigator contributing to the clinical studies “Heterologous Vaccination with Vakzevria and Comirnaty boost” (Haevacc, EudraCT No. 2021-002171-19) and “Humoral and Cellular Immune Response to Covid-19 Vaccination in Immunosuppressed Patients” (EudraCT 2021-000291-11).

Completed clinical training as general practitioner (Wiener Gesundheitsverbund), ius practicandi (approval to work as an independent medical doctor), certification as emergency doctor, NIDA clinical trials network GCP Certificate.

GRADUATE PROGRAM & EDUCATION

- University of Vienna:* Dr.rer.nat. program in Analytical Chemistry (spare-time, ongoing)
- Medical University of Vienna:* Graduate program Dr.med.univ. (M.D.) all three parts completed with distinction: 3 exams “grade B”, all other exams and electives “grade A”
Dissertation “On biological information and the prospect of analyzing and creating biological programs” in systems biology grade A with distinction by both supervisors (Medicine Prof. DDr. Johannes Huber, Theoretical Chemistry Prof. Dr Peter Schuster)
- Technical University of Vienna:* Graduate program in Electronics (partially completed: physics 1&2, mathematics, basics of electrical engineering, electronics, digital circuits, programming etc.)
- Anton-Bruckner Private University* Admission at the age of 7 years in concert piano class of Prof. Anton Voigt, Graduation with Extinction after 10 years of education
- Karlhof primary school, Hamerling secondary school:* all end of year notifications and school leaving exams “grade A”

PROFESSIONAL EXPERIENCE, SCIENCE AND TEACHING

<i>MUW and IMP Vienna</i>	2021/10 ongoing: Postdoc WWTF project „Precision Dialysis“ Prof. DDr. Manfred Hecking (MUW) & Karl Mechtler (IMP) Urine Proteomics in Dialysis, Covid & DM2
<i>MUW, ISPTM</i>	2021/06 ongoing: Physician Investigator within group Prof. Dr. Ursula Wiedermann-Schmidt Ph.D.: Haevacc EudraCT No. 2021-002171-19 & EudraCT 2021-000291-11
<i>Vienna Medical Association</i>	2017/05 ongoing: elected representative and deputy chair doctors in clinical training
<i>MUW Medical University Vienna</i>	04/2018 to 05/2020: clinical training Internal Medicine, University Clinic for Internal Medicine III, Department of Nephrology and Dialysis
<i>Sanatorium Hera</i>	08/2017 to 03/2018: health and prevention center (preventive medicine checkups)
<i>Dr. Renate Hoffmann-Dorninger</i>	02/2017 to 07/2017: practical training in doctor’s office (general medicine)
<i>Wiener Gesundheitsverbund</i>	2013/07 to 2017/01 Clinical training in general medicine (rotation), repeated excellent ratings by various clinic heads in evaluation reports
<i>IMP Vienna</i>	2012/05 to 2013/04: Research Institute of Molecular Pathology (protein chemistry group, Karl Mechtler) scientific staff member in senior post-doc position
<i>University of Vienna</i>	2006/03 to 2012/04: Max F. Perutz Laboratories, Department for Biochemistry and Cell Biology: Christian Doppler Laboratory for Proteome Analysis (group Prof. Dr. Gustav Ammerer) scientific staff member in post-doc position, later senior post-doc
<i>FH-Vienna</i>	2006 summer semester to 2018/19 winter semester: Lecturer study program Biotechnology (repeated teaching assignments “Proteomics Laboratory”, constant evaluation results by students highly above average
<i>Freelancer</i>	IT and network technology (since 1987)

CONTINUING EDUCATION AND COURSES

<i>NIDA clinical trials network</i>	GCP (Good Clinical Practice) Certificate 06/2021
<i>Continuing clinical education:</i>	rookie course intensive care, rookie course cardiology, emergency sonography with echocardiography, basic abdominal sonography echocardiography and sonography of carotid and vertebral arteries, several ECG courses, emergency doctor course 2016 with European Resuscitation Council training (Wiener Neustadt), emergency doctor refresher courses 2018 (Stift Göttweig) and 2020 (Bad Hofgastein)
<i>Laboratory techniques:</i>	Protein chemistry methods (sample preparation, phosphoproteomics etc), protein pull-down experiments (immunoprecipitation), Western Blots, molecular biology protocols, buffy coat preps, creating competent bacteria, transfection, extraction of RNA and protein, screening of cDNA libraries, PCR, preparation of nuclear extracts, PAGE gel shift assays, basic FACS & patch clamp methods (whole cell), cell culture
<i>Electives during MD program:</i>	Laboratory methods in Immunology and Molecular Biology, Medical Statistics 1 & 2
<i>University of California San Francisco:</i>	1991/07-09 three months summer research project in group Prof. Dr. Robert Cohen, Cancer Research Department (Prof. Dr. Marc Shuman), molecular biology experiments aiming at identification of transcription factors important in metastasis
<i>Yale University:</i>	clinical summer traineeship
<i>Karolinska Institute (Stockholm):</i>	semester abroad in pediatric medicine (credit for Vienna M.D. program)
<i>Harvard Medical School:</i>	Intensive Review of Internal Medicine (Continuing Medical Education)

STIPENDS, PRIZES AND GRANTS

<i>FWF grant TRP 308-N15:</i>	349847 Euro, Title: Self-learning Search Algorithms for High Resolution Mass-Spectra, first author in author’s list, contributed most relevant parts of text and scientific concept
<i>Biomarker Discovery:</i>	Search for potential protein biomarkers for early detection of acute kidney injury in patients with myocardial infarction, project at IMP Vienna in collaboration with US company Astute Medical and Prof. Dr. Ludwig Wagner (Medical University of Vienna)
<i>best oral short talk:</i>	Proteome Research Symposium Technical University Vienna 2007
<i>Scholarship University of Vienna:</i>	for term abroad at the Karolinska Institute within Vienna M.D. program

Scholarship BMWF: Ministry for Science and Research, for short subject-specific courses abroad: Yale
Scholarship BMWF: Ministry for Science and Research, for short scientific projects abroad: UCSF
Excellence Scholarship: Medical Faculty University of Vienna (granted to top 0.5% of M.D. students)

SCIENTIFIC PUBLICATIONS

As First Author:

Moczulska KE*, Pichler P*, Schutzbier M, Schleiffer A, Rumpel S, Mechtler K. Deep and precise quantification of the mouse synaptosomal proteome reveals substantial remodeling during postnatal maturation. *J Proteome Res.* 2014 Aug 26.

Dorfer V*, Pichler P*, Stranzl T*, Stadlmann J, Taus T, Winkler S, Mechtler K. MS Amanda, a Universal Identification Algorithm Optimized for High Accuracy Tandem Mass Spectra. *J Proteome Res.* 2014 Jun 9.

Pichler P*, Mazanek M*, Dusberger F, Weillböck L, Huber CG, Stingl C, Luider TM, Straube WL, Köcher T, Mechtler K. SIMPATIQC: a server-based software suite which facilitates monitoring the time course of LC-MS performance metrics on Orbitrap instruments. *J Proteome Res.* 2012 Nov 2;11(11):5540-7.

Sixt BS*, Heinz C*, Pichler P*, Heinz E, Montanaro J, Op den Camp HJ, Ammerer G, Mechtler K, Wagner M, Horn M. Proteomic analysis reveals a virtually complete set of proteins for translation and energy generation in elementary bodies of the amoeba symbiont *Protochlamydia amoebophila*. *Proteomics.* 2011 May;11(10):1868-92.

Pichler P, Köcher T, Holzmann J, Möhring T, Ammerer G, Mechtler K. Improved precision of iTRAQ and TMT quantification by an axial extraction field in an Orbitrap HCD cell. *Anal Chem.* 2011 Feb 15;83(4):1469-74.

Pichler P, Köcher T, Holzmann J, Mazanek M, Taus T, Ammerer G, Mechtler K. Peptide labeling with isobaric tags yields higher identification rates using iTRAQ 4-plex compared to TMT 6-plex and iTRAQ 8-plex on LTQ Orbitrap. *Anal Chem.* 2010 Aug 1;82(15):6549-58.

*shared first authors

As Co-Author:

The urinary microbiome shows different bacterial genera in renal transplant recipients and non-transplant patients at time of acute kidney injury - a pilot study. Gerges-Knafl D, Pichler P, Zimprich A, Hotzy C, Barousch W, Lang RM, Lobmeyr E, Baumgartner-Parzer S, Wagner L, Winnicki W. *BMC Nephrol.* 2020 Apr 6;21(1):117

A novel approach to immunoapheresis of C3a/C3 and proteomic identification of associates. Winnicki W, Pichler P, Mechtler K, Imre R, Steinmacher I, Sengölge G, Knafl D, Beilhack G, Wagner L. *PeerJ.* 2019 Dec 16;7:e8218

TORC1 signaling exerts spatial control over microtubule dynamics by promoting nuclear export of Stu2. van der Vaart B, Fischböck J, Mieck C, Pichler P, Mechtler K, Medema RH, Westermann S. *J Cell Biol.* 2017 Sep 29. 216 (11): 3471

Roitinger E, Hofer M, Köcher T, Pichler P, Novatchkova M, Yang J, Schlögelhofer P, Mechtler K. Quantitative Phosphoproteomics of the ATM and ATR dependent DNA damage response in *Arabidopsis thaliana*. *Mol Cell Proteomics.* 2015 Jan 5. pii: mcp.M114.040352.

Köcher T, Pichler P, Pra MD, Rieux L, Swart R, Mechtler K. Development and performance evaluation of an ultra-low flow nano liquid chromatography-tandem mass spectrometry set-up. *Proteomics.* 2014 Jun 11.

Walzer M, Pernas LE, Nasso S, Bittremieux W, Nahnsen S, Kelchtermans P, Pichler P, van den Toorn HW, Staes A, Vandenbussche J, Mazanek M, Taus T, Scheltema RA, Kelstrup CD, Gatto L, van Breukelen B, Aiche S, Valkenburg D, Laukens K, Lilley KS, Olsen JV, Heck AJ, Mechtler K, Aebersold R, Gevaert K, Vizcaino JA, Hermjakob H, Kohlbacher O, Martens L. qcML: an exchange format for quality control metrics from mass spectrometry experiments. *Mol Cell Proteomics.* 2014 Apr 23.

- Jüschke C, Dohnal I, Pichler P, Harzer H, Swart R, Ammerer G, Mechtler K, Knoblich JA. Transcriptome and proteome quantification of a tumor model provides novel insights into post-transcriptional gene regulation. *Genome Biol.* 2013;14(11):R133.
- Moruz L, Pichler P, Stranzl T, Mechtler K, Käll L. Optimized nonlinear gradients for reversed-phase liquid chromatography in shotgun proteomics. *Anal Chem.* 2013 Aug 20;85(16):7777-85.
- Aistleitner K, Heinz C, Hörmann A, Heinz E, Montanaro J, Schulz F, Maier E, Pichler P, Benz R, Horn M. Identification and characterization of a novel porin family highlights a major difference in the outer membrane of chlamydial symbionts and pathogens. *PLoS One.* 2013;8(1). Epub 2013 Jan 31.
- Köcher T, Pichler P, Swart R, Mechtler K. Analysis of protein mixtures from whole-cell extracts by single-run nanoLC-MS/MS using ultralong gradients. *Nat Protoc.* 2012 Apr 12;7(5):882-90.
- Taus T, Köcher T, Pichler P, Paschke C, Schmidt A, Henrich C, Mechtler K. Universal and Confident Phosphorylation Site Localization Using phosphoRS. *J Proteome Res.* 2011;10(12):5354-62.
- Reiter W, Anrather D, Dohnal I, Pichler P, Veis J, Grøtli M, Posas F, Ammerer G. Validation of regulated protein phosphorylation events in yeast by quantitative mass spectrometry analysis of purified proteins. *Proteomics.* 2012 Oct;12(19-20):3030-43.
- Grosstessner-Hain K, Hegemann B, Novatchkova M, Rameseder J, Joughin BA, Hudecz O, Roitinger E, Pichler P, Kraut N, Yaffe MB, Peters JM, Mechtler K. Quantitative phospho-proteomics to investigate the polo-like kinase 1-dependent phospho-proteome. *Mol Cell Proteomics.* 2011;10(11):M111.008540. Epub.
- Breitwieser FP, Müller A, Dayon L, Köcher T, Hainard A, Pichler P, Schmidt-Erfurth U, Superti-Furga G, Sanchez JC, Mechtler K, Bennett KL, Colinge J. General statistical modeling of data from protein relative expression isobaric tags. *J Proteome Res.* 2011;10(6):2758-66.
- Köcher T, Pichler P, Swart R, Mechtler K. Quality control in LC-MS/MS. *Proteomics.* 2011 Mar; 11(6): 1026-30.
- Köcher T, Pichler P, Mazanek M, Swart R, Mechtler K. Altered Mascot search results by changing the m/z range of MS/MS spectra: analysis and potential applications. *Anal Bioanal Chem.* 2011 Jun;400(8):2339-47.
- Heinz E, Pichler P, Heinz C, Op den Camp HJ, Toenshoff ER, Ammerer G, Mechtler K, Wagner M, Horn M. Proteomic analysis of the outer membrane of *Protochlamydia amoebophila* elementary bodies. *Proteomics.* 2010 Dec;10(24):4363-76.
- Holzmann J, Fuchs J, Pichler P, Peters JM, Mechtler K. Lesson from the stoichiometry determination of the cohesin complex: a short protease mediated elution increases the recovery from cross-linked antibody-conjugated beads. *J Proteome Res.* 2011 Feb 4;10(2):780-9.
- Haider S, Wagner M, Schmid MC, Sixt BS, Christian JG, Häcker G, Pichler P, Mechtler K, Müller A, Baranyi C, Toenshoff ER, Montanaro J, Horn M. Raman microspectroscopy reveals long-term extracellular activity of *Chlamydiae*. *Mol Microbiol.* 2010 Aug;77(3):687-700.
- Holzmann J, Pichler P, Madalinski M, Kurzbauer R, Mechtler K. Stoichiometry determination of the MP1-p14 complex using a novel and cost-efficient method to produce an equimolar mixture of standard peptides. *Anal Chem.* 2009 Dec 15;81(24):10254-61.
- Köcher T, Pichler P, Schutzbier M, Stingl C, Kaul A, Teucher N, Hasenfuss G, Penninger JM, Mechtler K. High precision quantitative proteomics using iTRAQ on an LTQ Orbitrap: a new mass spectrometric method combining the benefits of all. *J Proteome Res.* 2009 Oct;8(10):4743-52.
- Without peer-review:
- Pichler P, Wagner L, Baumann C, Schutzbier M, Kruft V, Mechtler K. Which biomarker would you like to discover today? A pilot study illustrating the feasibility of MS/MS^{ALL} with SWATHTM acquisition on the AB SCIEX TripleTOF® 5600+ System for biomarker discovery in Acute Kidney Injury. *Hospital Healthcare Europe* 2013.
- Pichler P, Köcher T, Mechtler K. Mass spectrometry for medicine and oncology: status quo, applications and challenges. 36th Seminar of the Austrian Society for Surgical Research. Abstracts. *European Surgery* 2012. Vol 44 Suppl. Nr 248 (Acta Chirurgica Austriaca), p10.

POSTERS AND TALKS

- DGMS, March 2013:* “Mass Spectrometry for Medicine: Importance of Quality Control”, invited talk, Applied Biosystems seminar at the 46th Annual Conference of the German Society for Mass Spectrometry, Berlin, Germany
- Prime-XS, January 2013:* “Mass spectrometry in clinical medicine” at the Prime-XS Meeting, Annecy, France
- MUW, November 2012:* “Mass spectrometry for medicine and oncology: status quo, applications and challenges”, talk at the “Seminar chirurgische Forschung”, Vienna, Austria
- ASMS, June 2012:* “Proteome Discoverer Node Development and Side Projects”, invited talk, Thermo Scientific seminar at the 60th Annual Conference of the American Society for Mass Spectrometry, Vancouver, British Columbia
- Uni Vienna, February 2012:* “Quantitative proteomics: Not all quantification methods are created equal”, invited talk at the 23rd MassSpec Forum Vienna, Vienna, Austria
- IMP, September 2011:* Session Chair “Bioinformatics” at the Late Summer Practical Proteomics Seminar, IMP (Research Institute of Molecular Pathology), Vienna, Austria
- ASMS, June 2011:* Session Chair “Quantitative Proteomics” at the 59th Annual Conference of the American Society for Mass Spectrometry, Denver, Colorado
- DGMS, February/March 2011:* Some quantification strategies are more useful than others, short talk at the 44th Annual Conference of the German Society for Mass Spectrometry, Dortmund, Germany
- EMBL, December 2010:* “Mass spectrometry to study protein complexes”, invited talk, EMBL Hamburg, Germany
- IMP, September 2010:* Session Chair “Quantitative Proteomics” at the Late Summer Practical Proteomics Seminar, IMP (Research Institute of Molecular Pathology), Vienna, Austria
- ASMS, June 2009:* “Improved iTRAQ & TMT quantification on an LTQ Orbitrap equipped with a new type of HCD fragmentation cell”, poster at the 57th Annual Conference of the American Society for Mass Spectrometry, Philadelphia, Pennsylvania
- APP Symposion, January 2009:* “Combined shotgun and targeted iTRAQ-based quantification on a MALDI-TOF/TOF instrument applied to knock-out mice”, poster at the 6th International Symposion of the Austrian Proteomics Platform, Seefeld, Austria
- ASMS, June 2008:* “A two-stage design for rapid and reliable quantitation applied to knock-out mice: combining shotgun and targeted iTRAQ measurements”, poster at the 56th Annual Conference of the American Society for Mass Spectrometry, Denver, Colorado
- APP Symposion, January 2008:* “Inclusion lists on MALDI-TOF/TOF for transgenic mouse proteomics”, short talk at the 5th International Symposion of the Austrian Proteomics Platform, Seefeld, Austria
- TU-Vienna, September 2007:* “iTRAQ-based quantitative proteomics in c-jun knock-out mice”, prize for best short talk, 5th Austrian Proteome Research Symposium, TU-Wien, Vienna, Austria
- APP Symposion, January 2007:* “Transgenic Mouse Proteomics”, short talk at the 4th International Symposion of the Austrian Proteomics Platform, Seefeld, Austria



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