

Curriculum Vitae



name	Johannes D. Pallua
address	Medical University of Innsbruck Dept. of Trauma Surgery Anichstrasse 35 A-6020 Innsbruck, Austria
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E-Mail	johannes.pallua@i-med.ac.at
nationality	Austria
date of birth	02.12.1982
ORCID iD	0000-0003-0203-213X
period	since April 2020
function	Post-Doc
institution	Innsbruck Medical University Department of Traumatology
field of science	Early diagnosis, prediction, and development of personalized treatment strategies to improve long-term outcomes in Osteoporosis with a Novel Extended Molecular Imaging Platform. Development of a large population-based osteoporosis biobank. Artificial intelligence for diagnostic support in osteoporosis. Individualized implants based on digital data.
period	2016/04 - 2020/04
function	Post-Doc
institution	Innsbruck Medical University Department of Pathology
field of science	Next-generation sequencing in cancer diagnosis, prognosis and personalized treatment. Digital pathology: acquisition, management and interpretation of pathology information. Establishment of a fully automated, real-time PCR based molecular diagnostics system (Idylla). Tissue characterization of cancer by imaging mass spectrometry and infrared spectroscopic imaging.
period	2012/10 – 2016/04
function	Post-Doc
institution	Innsbruck Medical University Institute of Legal Medicine
field of science	Ancient DNA extraction from human bones and teeth. Characterization of the post-mortem interval of human skeletal remains with a novel extended molecular imaging platform. Single hair analysis of drugs using imaging mass spectrometry.

	Discrimination of human and animal blood traces via infrared spectroscopy.
	Tissue characterization of cancer by imaging mass spectrometry and infrared spectroscopic imaging.
period	2011/06 – 2012/09
function	Post-Doc
institution	Leopold-Franzens University Innsbruck Institute of Analytical Chemistry and Radiochemistry
field of science	Characterization of pharmaceutical relevant plants using a chromatographic and spectroscopic analytical platform. Simultaneous quantification of drugs by infrared spectroscopy and high-performance liquid chromatography.
period	2011/06 – 2015/03
field of study	"Doctor of Philosophy"-Doktoratsstudium Biologie
institution	Leopold-Franzens University Innsbruck Institute for Microbiology
title	Tissue characterization of fungal fruiting bodies with a novel extended imaging platform
field of science	Morphological and tissue characterization of the medicinal fungus <i>Hericium coralloides</i> by a structural and molecular imaging platform.
period	2008/01 – 2011/06
field of study	PhD in chemistry
degree	Doctor of Science
institution	Leopold-Franzens University Innsbruck Institute of Analytical Chemistry and Radiochemistry
title	Tissue characterization of prostate cancer by matrix-assisted laser desorption/ionization, imaging mass spectrometry and Fourier transform infrared spectroscopic imaging
field of science	Infrared spectroscopic imaging and imaging mass spectrometry in discrimination studies of squamous cell carcinoma and malignant prostate tissue.
period	2002/10 – 2007/09
field of study	master of biology
degree	master of science in microbiology and molecular biology
institution	Innsbruck Medical University Institute of Pharmacology
title	Generation of a targeting construct for germline Knock-out of mG1u1 α [alpha], conditional Knock-out of mG1u1 β [beta] and HA-F1ASh-tagging of mG1u1d
field of science	Neuronal circuits underlying fear and anxiety. Metabotropic glutamate receptors in central nervous system function and dysfunction.

Publications

Thesis

Infrared Microscopic Imaging of Biological Tissues in Life Science. 10/2018, Degree: Habilitation Experimental Pathology at the Medical University of Innsbruck

Tissue characterization of fungal fruiting bodies with a novel extended imaging platform. 11/2014, Degree: PhD, Supervisor: Reinhold Pöder

Tissue characterization of prostate cancer by matrix assisted laser: desorption/ionization (MALDI), imaging mass spectrometry (IMS) and fourier transform infrared (FTIR) spectroscopic imaging. 01/2011, Degree: Dr. rer. nat., Supervisor: Günther Bonn

Generation of a targeting construct for germ line Knock-out of mG1u1 α [alpha], conditional Knock-out of mG1u1 β [beta] and HA-F1ASh-tagging of mG1u1d. 05/2006, Degree: Mag. rer. nat., Mag. rer. nat., Supervisor: Christoph Schwarzer, Bernhard Redl

Book Chapters

S. Schönbichler, L. Bittner, **J D Pallua**, V. Huck-Pezzei, C. Pezzei, G. Bonn, C. Huck: Applications of Carbon Nanomaterials for MALDI-TOF-MS and Electrochemical Analysis of Insulin. *Nanotechnology and Nanomedicine in Diabetes*, 03/2012: pages 202-223; ISBN: 978-1-57808-729-7

S.A. Schoenbichler, L.K. Bittner, **J D Pallua**, V.A. Huck-Pezzei, C. Pezzei, G.K. Bonn, Christian W. Huck: *Applications of carbon nano materials for MALDI-TOS-MS and electrochemical analysis of insulin*. *Advances in Biomedical Spectroscopy*, Edited by F. Severcan, P.I. Haris, 01/2012: pages 202 - 223; IOS Press.

Journal Publications

J.D. Pallua, A. Brunner, B. Zelger, M. Schirmer, J. Haybaeck: The future of pathology is digital. *Pathology - Research and Practice* (2020). DOI: 10.1016/j.prp.2020.153040

C. Wöss, S. H. Unterberger, G. Degenhart, A. Akolkar, R. Traxl, V. Kuhn, M. Schirmer, A. K. Pallua, R. Tappert, **J. D. Pallua**: Comparison of Structure and Composition of a Fossil Champsosaurus Vertebra With Modern Crocodylidae Vertebrae: A Multi-Instrumental Approach. *J Mech Behav Biomed Mater* (2020):104:103668. DOI: 10.1016/j.jmbbm.2020.103668.

M. Lackner, J. Obermair, V. Naschberger, L. Raschbichler, C. Kandelbauer, **J. D. Pallua**, J. Metzlauff, S. Furxer, C. Lass-Flörl, U. Binder: Cryptic species of *Aspergillus* section *Terrei* display essential physiological features to cause infection and are similar in their virulence potential in *Galleria mellonella*. *Virulence* (2019):542-554 DOI: 10.1080/21505594

R. Caramalho, L. Madl, K. Rosam, G. Rambach, C. Speth, **J. D. Pallua**, T. Larentis, R Araujo, A. Alastruey-Izquierdo, C. Lass-Flörl, M. Lackner: Evaluation of a Novel Mitochondrial Pan-Mucorales Marker for the Detection, Identification, Quantification, and Growth

- Stage Determination of Mucormycetes. *Journal of Fungi* (2019):98 DOI: 10.3390/jof5040098
- U. Binder, M. I. Navarro-Mendoza, V. Naschberger, I. Bauer, F. E. Nicolas, **J. D. Pallua**, C. Lass-Flörl, V. Garre: Generation of A *Mucor circinelloides* Reporter Strain—A Promising New Tool to Study Antifungal Drug Efficacy and Mucormycosis. *Genes* 9.12 (2018):613 DOI: 10.3390/genes9120613
- J. D. Pallua**, A. Brunner, B. Zelger, R. Stalder, S. H. Unterberger, M. Schirmer, & M. C. Tappert. Clinical infrared microscopic imaging: An overview. *Pathology-Research and Practice* 2018; 214 (10). DOI: 10.1016/j.prp.2018.08.026
- C. Woess, S. Unterberger, C. Roider, M. Ritsch-Marte, N. Pemberger, J. Cemper-Kiesslich, P. Hatzer-Grubwieser, W. Parson, **J D Pallua**: Assessing various Infrared (IR) microscopic imaging techniques for post-mortem interval evaluation of human skeletal remains. *PloS one* 12.3 (2017): e0174552.
- C. Wöss, M. Drach, A. Villunger, R. Tappert, R. Stalder, **J D Pallua**: *Application of mid-infrared (MIR) microscopy imaging for discrimination between follicular hyperplasia and follicular lymphoma in transgenic mice*. *The Analyst* 07/2015; 140(18). DOI:10.1039/C5AN01072A
- S. Longato, C. Wöss, P. Hatzer-Grubwieser, C. Bauer, W. Parson, S. Unterberger, V. Kuhn, N. Pemberger, A.K. Pallua, W. Recheis, R. Lackner, R. Stalder, **J D Pallua**: *Post-mortem Interval Estimation of Human Skeletal Remains by Micro-Computed Tomography, Mid-Infrared Microscopic Imaging and Energy Dispersive X-ray Mapping*. *Analytical methods* 02/2015; 7(7). DOI:10.1039/C4AY02943G
- J D Pallua**, V. Kuhn, A.F. Pallua, K. Pfaller, A.K. Pallua, W. Recheis, R. Pöder: *Application of micro-computed tomography to microstructure studies of the medicinal fungus *Hericium coralloides**. *Mycologia* 11/2014; 107(1). DOI:10.3852/14-188
- J D Pallua**, S. H. Unterberger, G. Metzler, K. Pfaller, A. K. Pallua, Lackner, A. F. Pallua, W. Recheis, R. Poeder: *Application of 3-D Surface Reconstruction by Mid- and Near-Infrared Microscopic Imaging for Anatomical Studies on *Hericium coralloides* Basidiomata*. *Analytical methods* 01/2014; 6(4):1149-1157. DOI:10.1039/c3ay42082e
- J D Pallua**, G. Schaefer, C. Seifarth, M. Becker, S. Meding, S. Rauser, A. Walch, M. Handler, M. Netzer, M. Popovscaia, M. Osl, C. Baumgartner, H. Lindner, L. Kremser, B. Sarg, G. Bartsch, C.W. Huck, G.K. Bonn, H. Klocker: *MALDI-MS Tissue Imaging Identification of Biliverdin Reductase B Overexpression in Prostate Cancer*. *Journal of proteomics* 08/2013; 91. DOI:10.1016/j.jppt.2013.08.003
- S.A. Schönlichler, L K H Bittner, **J D Pallua**, M Popp, G Abel, G K Bonn, C W Huck: *Simultaneous quantification of verbenalin and verbascoside in *Verbena officinalis* by ATR-IR and NIR spectroscopy*. *Journal of pharmaceutical and biomedical analysis* 05/2013; 84C:97-102. DOI:10.1016/j.jpba.2013.04.038
- S.A. Schönlichler, L. K. H. Bittner, A. K. H. Weiss, U J Griesser, **J D Pallua**, C W Huck: *Comparison of NIR chemical imaging with conventional NIR, Raman and ATR-IR spectroscopy for quantification of furosemide crystal polymorphs in ternary powder mixtures*. *European journal of pharmaceuticals and biopharmaceutics: official journal of Arbeitsgemeinschaft für Pharmazeutische Verfahrenstechnik e.V* 02/2013; 84(3). DOI:10.1016/j.ejpb.2013.01.006

- V. A. Huck-Pezzei, L. K. Bittner, **J D Pallua**, H. Sonderegger, G. Abel, M. Popp, G. K. Bonn, C. W. Huck: *A chromatographic and spectroscopic analytical platform for the characterization of St John's wort extract adulterations*. Analytical methods 01/2013; 5(3):616-628. DOI:10.1039/C2AY26030A
- C. Huck, V.A. Huck-Pezzei, L.K. Bittner, **J D Pallua**, H. Sonderegger, G. Abel, M. Popp, G.K. Bonn: *Inside front cover: A chromatographic and spectroscopic analytical platform for the characterization of St. John's worth extract adulterations*. Analytical methods 01/2013; 5:570.
- V A Huck-Pezzei, **J D Pallua**, C Pezzei, L K Bittner, S A Schönlichler, G Abel, M Popp, G K Bonn, C W Huck: *Fourier transform infrared imaging analysis in discrimination studies of St. John's worth (Hypericum perforatum)*. Analytical and Bioanalytical Chemistry 10/2012; 404(6-7):1771-8. DOI:10.1007/s00216-012-6296-9
- J D Pallua**, C Pezzei, B Zelger, G Schaefer, L K Bittner, V A Huck-Pezzei, S A Schoenbichler, H Hahn, A Kloss-Brandstaetter, F Kloss, G K Bonn, C W Huck: *Fourier transform infrared imaging analysis in discrimination studies of squamous cell carcinoma*. The Analyst 07/2012; 137(17):3965-74. DOI:10.1039/c2an35483g
- A. Saeed, C. W. Huck, **J D Pallua**, V. A. Huck-Pezzei, L. Bittner, C. Pezzei, S. Schonbichler, A. M. Qureshi, G. K. Bonn, M. Najam-ul-Haq: *Role of Infrared Spectroscopy in Proteomics and Subsequently the Biomarker Analysis*. Current Proteomics 07/2012; 9(4):118-131. DOI:10.2174/157016412800786239
- J D Pallua**, C. Pezzei, G. Schaefer, B. Zelger, A. Brunner, A. Kloss-Brandstaetter, F. Kloss, H. Klocker, G. Bartsch, V.A. Huck-Pezzei, V.A. Schoenbichler, L.K. Bittner, G.K. Bonn, Christian W. Huck: *Advanced Vibrational Spectroscopic Imaging of Human Tissue in Life Science*. Current Proteomics 05/2012; 9(2):132 - 142. DOI:10.2174/157016412800786211
- C W Huck, C Pezzei, V A Huck-Pezzei, **J D Pallua**, S A Schoenbichler, L K Bittner, G K Bonn: *Near infrared spectroscopy patents for the physicochemical characterization of nanomaterials: The road from production to routine high-throughput quality control*. 03/2012; 6(2):135-41.
- J D Pallua**, W. Recheis, R. Poeder, K. Pfaller, C. Pezzei, H. Hahn, Verena A. Huck-Pezzei, L.K. Bittner, G. Schäfer, E. Steiner, G. Andre, S. Hutwimmer, S. Felber, A.K. Pallua, A.F. Pallua, G.K. Bonn, Christian W. Huck: *Inside Front Cover: Morphological and Tissue Characterization of the Medicinal Fungus Hericium corraloides by a Structural and Molecular Imaging Platform*. The Analyst 01/2012; 137:1513.
- J D Pallua**, W Recheis, R Pöder, K Pfaller, C Pezzei, H Hahn, V Huck-Pezzei, L K Bittner, G Schaefer, E Steiner, G Andre, S Hutwimmer, S Felber, A K Pallua, A F Pallua, G K Bonn, C W Huck: *Morphological and tissue characterization of the medicinal fungus Hericium coralloides by a structural and molecular imaging platform*. The Analyst 12/2011; 137(7):1584-95. DOI:10.1039/c1an15615b
- CW Huck, **J D Pallua**, C Pezzei, VA Huck Pezzei, L Bittner, S Schönlichler, GK Bonn: *Advances of Infrared Spectroscopic Imaging and Mapping Technologies of Plant Material*. Planta Medica 08/2011; 77(12). DOI:10.1055/s-0031-1282179
- L. P. Guo, L. Q. Huang, X. P. Zhang, L. Bittner, C. Pezzei, **J D Pallua**, S. Schonbichler, V. A. Huck-Pezzei, G. K. Bonn, C. W. Huck: *Application of Near-Infrared Spectroscopy*

- (NIRS) as a Tool for Quality Control in Traditional Chinese Medicine (TCM). *Current Bioactive Compounds* 06/2011; 7(2):75-84. DOI:10.2174/157340711796011188
- J D Pallua**, C Pezzei, V Huck-Pezzei, S A Schonbichler, L K Bittner, G K Bonn, A Saeed, S Majeed, A Farooq, M Najam-ul-Haq, G Abel, M Popp, C W Huck: *Advances of Infrared Spectroscopic Imaging and Mapping Technologies of Plant Material*. *Current Bioactive Compounds* 06/2011; 7(2):106-117. DOI:10.2174/157340711796011179
- M Najam-ul-Haq, S Majeed, A Saeed, C W Huck, V A Huck-Pezzei, **J D Pallua**, L Bittner, S Schonbichler, C Pezzei, M Athar, N Mahmood, G K Bonn: *Role of Infrared Spectroscopy in Medicinal Plants Research in Pakistan*. *Current Bioactive Compounds* 06/2011; 7(2):85-92. DOI:10.2174/157340711796011151
- J. Klarica, L. Bittner, **J D Pallua**, C. Pezzei, Verena Huck-Pezzei, F. Dowell, J. Schied, G.K. Bonn, C. Huck, B.C. Schlick-Steiner, F. M Steiner: *Near-Infrared Imaging Spectroscopy as a Tool to Discriminate Two Cryptic Tetramorium Ant Species*. *Journal of Chemical Ecology* 06/2011; 37(6):549-52. DOI:10.1007/s10886-011-9956-x
- M. Handler, **J D Pallua**, G. Schäfer, M. Netzer, M. Osl, M. Seger, B. Pfeifer, M. Becker, S. Meding, S. Rauser, A. Walch, H. Klocker, G. Bartsch, C.W. Huck, C. Baumgartner, G.K. Bonn: *A Workflow for Preprocessing and Proteomic Biomarker Identification on Mass-Spectrometry Data*.
- L.K. Bittner, S.A. Schönbichler, Verena A. Huck-Pezzei, **J D Pallua**, C. Pezzei, G.K. Bonn, Christian W. Huck: *Near infrared spectroscopy of nanostructured materials*. *Spectroscopy Europe* 04/2011; 23(2):16 - 19.
- L.K. Bittner, S.A. Schönbichler, Verena A. Huck-Pezzei, C. Pezzei, **J D Pallua**, G.K. Bonn, Christian W. Huck: *Applications of NIR Spectroscopy For Quality Control in Traditional Chinese Herbal Medicine – A Brief Overview*. *NIR news* 01/2011; 22:7 - 9. DOI:10.1255/nirn.1255
- J D Pallua**, G. Schaefer, L.K. Bittner, C. Pezzei, Verena A. Pezzei, S.A. Schoenbichler, S. Meding, S. Rauser, A. Walch, M. Handler, M. Netzer, M. Osl, M. Seger, B. Pfeifer, C. Baumgartner, H. Lindner, L. Kresmer, B. Sarg, H. Klocker, G. Bartsch, G.K. Bonn, Christian W. Huck: *Matrix-assisted laser desorption ionization imaging mass spectrometry for direct tissue analysis*. *Lc Gc North America* 01/2011;
- C. Pezzei, **J D Pallua**, G. Schaefer, C. Seifarth, V. Huck-Pezzei, L.K. Bittner, H. Klocker, G. Bartsch, G.K. Bonn, C.W. Huck: *Characterization of normal and malignant prostate tissue by Fourier transform infrared microspectroscopy*. *Molecular BioSystems* 11/2010; 6(11):2287-95. DOI:10.1039/c0mb00041h
- H Hahn, **J D Pallua**, C Pezzei, V Huck-Pezzei, G.K. Bonn, C.W. Huck: *Infrared-Spectroscopy: A Non-Invasive Tool for Medical Diagnostics and Drug Analysis*. *Current Medicinal Chemistry* 09/2010; 17(26):2956-66. DOI:10.2174/092986710792065063
- C. H. Petter, N. Heigl, M. Rainer, R. Bakry, **J D Pallua**, G. K. Bonn, C. W. Huck: *Development and Application of Fourier Transform Infrared Chemical Imaging of Tumour in Human Tissue*. *Current Medicinal Chemistry* 01/2009; 16(3):318-326. DOI:10.2174/092986709787002664

Patents

H Klocker, G Schaefer, C Seifarth, **J D Pallua**, G K Bonn, C Huck: *Use of Biliverdin Reductase As Cancer Biomarker*. Ref. No: Eur. Pat. Appl. (2014), EP2700949 A1 20140226, Year: 01/2014

Conference Proceedings

- E. Willenbacher, A. Brunner, W. Willenbacher, B. Zelger, D. Wolf, D. Rogge, M. Tappert **J. D. Pallua** Characterizing Ki67 Antibody Staining For Non-Hodgkin's Lymphoma Using Visible And Near-Infrared Hyperspectral Imaging Techniques. Experimental Hematology, 08/2019
- J. D. Pallua**, S. H. Unterberger, B. Zelger, R. Stalder, E. Willenbacher, W. Willenbacher, A. Brunner A Application of mid-infrared microscopic imaging for the diagnosis and classification of human lymphoma. Roche Science Talk, Vienna, Austria; 11/2018
- J. D. Pallua**, S. H. Unterberger, B. Zelger, R. Stalder, E. Willenbacher, W. Willenbacher, A. Brunner A retrospective case study on the suitability of mid-infrared microscopic imaging for the diagnosis and classification of human lymphoma. ÖGPath, Graz, Austria; 09/2018
- J D Pallua**: *Post-mortem Interval Estimation of Human Skeletal Remains by Micro-Computed Tomography, Mid-Infrared Microscopic Imaging and Energy Dispersive X-ray Mapping*. 7th Imaging in Drug Discovery Conference, Dublin, Ireland; 10/2014
- J D Pallua**, V. Kuhn, K. Pfaller, A. K. Pallua, C. Kremser, R. Poeder, W. Recheis: *Micro-Computed Tomography of the Microstructure of the Medical Fungus *Hericium coralloides**. Scanco Medical User Meeting, Appenzell, Switzerland; 10/2013
- J D Pallua**, F. Kloss, G. Schafer, B. Zelger, G. Bonn, C. Huck: *Fourier transformed infrared imaging (FTIR) – eine neue Technik zur Diagnostik von oralen Plattenepithelkarzinomen*. 17. Jahreskongress der Österreichischen Gesellschaft für Mund-, Kiefer- und Gesichtschirurgie; 01/2013
- V.A. Huck-Pezzei, L. Hua, L.K. Bittner, S.A. Schönbichler, C. Pezzei, **J D Pallua**, Christian W. Huck: *Application of near-infrared spectroscopy (NIRS) as a tool for quality control in Traditional Chinese Medicine (TCM)*. 15th International Conference on Near Infrared Spectroscopy, Cape Town, South Africa; 01/2012
- J D Pallua**: *Fourier transform infrared imaging analysis in discrimination studies of prostate cell lines and prostate cancer tissue*. 2nd Life Science Meeting (Biocenter + CMBI), Igls; 09/2010
- L. Bittner, C. Lux, V. Huck-Pezzei, **J D Pallua**, C. Pezzei, S. Schönbichler, H. Pulker, G.K. Bonn, C.W. Huck: *Vibrational spectroscopy as a tool to monitor the microwave-assisted drying process of wood*. 2nd Life Science Meeting (Biocenter + CMBI), Igls; 09/2010
- J D Pallua**, Huck C., Pezzei C., Schaefer G., Seifarth C., Recheis W., Klocker H., Bartsch G., Bonn G.: *Prostate Cancer: Direct Tissue Characterization by FTIR-Imaging*. Euroanalysis 2009, Innsbruck; 09/2009
- J D Pallua**, Schaefer G, Pezzei C, Seifarth C, Rainer M, Fuchsberger C, Meding S, Recheis W, Rauser S, Walch A, Klocker H, Huck C, Bartsch G, Bonn G: *Tissue Characterization*

of Prostate Cancer by MALDI-IMS and FTIR-Imaging. Sixth International Symposium of the Austrian Proteomics Platform APP, Seefeld, Tirol; 01/2009

A full and updated list of publications can be found at:

ResearchGate: https://www.researchgate.net/profile/Johannes_Pallua/publications

Mendeley: <https://www.mendeley.com/profiles/johannes-pallua/>

ORCID: <https://orcid.org/0000-0003-0203-213X>

