

CURRICULUM VITAE

Frank Wuest, *Ph.D.; Dr. rer. nat. habil.*

Professor and Chair, Department of Oncology
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Education/Training:

1992 BSc in chemistry, University of Technology Merseburg (Germany)
1995 Diploma (M.Sc.) in chemistry, University of Technology Dresden (Germany)
1997-1998 Ph.D. studies at the University of Illinois at Urbana-Champaign (USA) supported by a German Academic Exchange Service (DAAD) scholarship
1999 Ph.D. (*Dr. rer. nat.*) in chemistry, University of Technology Dresden (Germany)
1999-2000 Postdoctoral Fellow, Washington University, School of Medicine in St. Louis (USA)
2006 Habilitation thesis (*Dr. rer. nat. habil.*) in biochemistry and Venia legendi in biochemistry, University of Technology Dresden (Germany)

Professional Career:

2000-2001 Research Scientist, Institute for Interdisciplinary Isotope Research, University of Leipzig (Germany)
2001-2006 Head, Junior Research Group "*Radiopharmaceutical Chemistry*", Institute of Radiopharmacy, Research Center Dresden-Rossendorf (Germany)
2001-2008 Head, PET-Tracer Division, Institute of Radiopharmacy, Research Center Dresden-Rossendorf (Germany)
Since 2008 Private lecturer (Privatdozent) for biochemistry, University of Technology Dresden
2008-2013 Associate Professor and the Dianne and Irving Kipnes Chair in Radiopharmaceutical Sciences, Department of Oncology, University of Alberta
Since 2010 Adjunct Professor, Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta
Since 2013 Full Professor, Department of Oncology, University of Alberta
Since 2015 Director Division of Oncologic Imaging, University of Alberta
Since 2019 Adjunct Professor, Department of Chemistry, University of Alberta
Since 2019 Chair, "*Innovation, Research, and Education*" Committee, Alberta Radiopharmaceutical Collaboration (ARC)
2020-2021 Interim Chair, Department of Oncology, University of Alberta
2021- Director-at-Large; Society of Radiopharmaceutical Sciences (SRS)
2021- Chair, Department of Oncology, University of Alberta

Scholarships and Awards:

1997 German Academic Exchange Service (DAAD) Scholarship for Ph.D. studies at the the University of Illinois at Urbana-Champaign (USA)
1999 Ph.D. Award of the Research Center Rossendorf (Germany)
2006 Venia legendi in Biochemistry, University of Technology Dresden (Germany)
2006 Guest Professor, Department of Chemistry, Beijing Normal University (China)
Since 2008 The Dianne and Irving Kipnes Chair in Radiopharmaceutical Sciences, Department of Oncology, University of Alberta, Edmonton (Canada).
2010-2017 Alberta Innovates – Health Solutions (AIHS) Senior Scholar.
2013 Promotion to Full Professor, Department of Oncology, University of Alberta

Editorial and Scientific Board Memberships

Pharmaceutics; American Journal of Nuclear Medicine and Molecular Imaging; Mini-Reviews in Medicinal Chemistry; Frontiers in Nuclear Medicine
International Organizing Committee of the International Symposium of Radiopharmaceutical Sciences

Professional Memberships

Society of Radiopharmaceutical Sciences (SRS), Society of Nuclear Medicine and Molecular Imaging (SNMMI), Cancer Research Institute of Northern Alberta (CRINA)

Other Activities and Contributions

International Atomic Energy Agency (IAEA); Nuclear medicine and diagnostic imaging expert

List of publications

1. Peer-reviewed journals (Submitted/Under revision: 4; In Press: 1; Published: 196)

2. Book chapters and monographs (Total: 10)

3. Peer-reviewed abstracts (Total: 127, Details not listed)

1. Peer-reviewed journals

201. N.M. Pollock, J.P. Fernandes, B. Hlavay, W.G. Branton, M. Wuest, N Mohammadzadeh, L. Schmitt, J.R. Plemel, F. Wuest, C. Power. Gasdermin D activation in CNS macrophages mediates demyelination and axonal injury in progressive multiple sclerosis. *Nature Commun.* Submitted
200. B. J. Nelson, J. Wilson, M. Schultz, J. D. Andersson, F. Wuest. Taking cyclotron ²⁰³Pb production to the next level: Higher energy ²⁰³Pb production using a sealed ²⁰⁵Tl solid target for diagnostic SPECT imaging. *Nucl. Med. Biol.* Submitted.
199. A. J. Boyle, E. Murrell, J. Tong, C. Schifani, A. Narvaez, M. Wuest, F. West, F. Wuest, N. Vasdev. PET imaging of GLUT5 in a rodent model of neuroinflammation with [¹⁸F]6-fluoro-6-deoxy-D-fructose. *Molecules.* Submitted.
198. A. B. Bukhari, M. Wuest, F. Wuest, A. M. Gamper. Positron Emission Tomography with [¹⁸F]-FLT as predictive non-invasive biomarker for neoadjuvant therapy with Wee1 and ATR inhibitors. *J. Nucl. Med.* Submitted.
197. N. Rana, M. A. Aziz, R. A.T. Serya, D. S. Lasheen, N. Samir, F. Wuest, K. A.M. Abouzidd, F. G. West. A novel fluorescence-based assay to probe inhibitory effect of fructose mimics on GLUT5 transport in breast cancer cells. *ACS Bio & Med Chem Au.* In press.
196. B. J. B. Nelson, J. D. Andersson, F. Wuest, S. Spreckelmeyer. Good Practices – ⁶⁸Ga-radio-labeling. *EJNMMI Radiopharm. & Chemistry.* 2022, 7, 27.
195. A. Roczkowsky, M. A. Doan, B. Hlavay, M. K. Mamik, W. G. Branton, B. A. McKenzie, L. Schmitt, G. Eitzen, F. Di Cara, M. Wuest, F. Wuest, D. Muruve, R. Rachubinski, C. Power. Peroxisome injury in progressive multiple sclerosis: protective effects of 4-phenylbutyrate in microglia. *J. Neurosci.* 2022, 42, 7152-7165.
194. F. D. Juengling, F. Wuest, S. Kalra, F. Agosta, R. Schirrmacher, A. Thiel, W. Thaiss, H.-P. Müller, J. Kassubek. Simultaneous PET/MRI -The future gold standard for characterizing motor neuron disease? A clinico-radiological and neuroscientific perspective. *Front. Neurosci.* 2022, 13, 890425.
193. Bryce J.B. Nelson, Jan D. Andersson, Frank Wuest. Radiolanthanum: Promising theranostic radionuclides for PET, Alpha, and Auger-Meitner therapy. *Nucl. Med. Biol.* 2022, 110-111, 59-66.
192. A. Pérez Nario, J. Woodfield, S. Nascimento dos Santos, C. Bergman, M. Wuest, Y. Babí Araújo, F. G. West, F. Wuest, E. Soares Bernardes. Synthesis of a 2-Nitroimidazole Derivative N-(4-[¹⁸F]fluorobenzyl)-2-(2-nitro-1H-imidazol-1-yl)-acetamide ([¹⁸F]FBNA) as PET Radiotracer for Imaging Tumor Hypoxia. *EJNMMI Radiopharm. Chem.* 2022, 7, 13196.

191. J. Kaur, A. Bhardwaj, F. Wuest. Fluorine-18 Labeled Molecular Imaging Probes for Cyclooxygenase-2. *Molecules*. 2022, 27, 3722.
190. M. I. El-Barghouthi, A. S. Hasan, W. Al-Awaida, H. Al Ameer, J. Kaur, K. J. Hayashibara, J. Fleming, J. Waknin, S. Hayashibara, M. Slewa, S. M. Hamzeh, K. Bodoor, J. McCloud, F. Wuest, B. J. Al Hourani. Novel Therapeutic Heterocycles as Selective Cyclooxygenase-2 Inhibitors and Anti-Cancer Agents: Synthesis, In Vitro Bioassay Screenings, and Molecular Docking Studies. *J. Mol. Struct.* 2022, 1263, 133141.
189. N. Rana, M. A. Aziza, A. K. Oraby, M. Wuest, J. Dufour, R. A. Serya, D. S. Lasheen, N. Samir, K. A. Abouzid, F. Wuest, F. G. West. Towards selective binding to GLUT5 transporter - synthesis, molecular dynamics and in vitro evaluation of novel C-3 modified 2,5-anhydro-D-mannitol analogs. *Pharmaceutics*. 2022, 14, 828.
188. B.J.B. Nelson, S. Ferguson, M. Wuest, J. Wilson, M. J. Duke, S. Richter, J. D. Andersson, H.-S. Jans, F. Juengling, F. Wuest. First in vivo and phantom imaging of cyclotron produced ¹³³La as a theragnostic pair for ²²⁵Ac and ¹³⁵La. *J. Nucl. Med.* 2022, 63, 584-590.
187. R. Yuen, F. G. West, F. Wuest. Dual Probes for Positron Emission Tomography (PET) and Fluorescence Imaging (FI) of Cancer. *Pharmaceutics*. 2022, 14, 645. 187.J. D. Way, A. Bhardwaj, C. Bergman, F. Wuest. Chemical synthesis and binding affinity analysis of small molecular weight HIF-1 α inhibitors. *ChemMedChem*. 2022, 17, e202100544.
186. J. J. Bailey, M. Wuest, M. Wagner, A. Bhardwaj, C. Waengler, B. Waengler, J. F. Valliant, R. Schirmacher, F. Wuest. Evolution of a novel class of ¹⁸F-labeled compounds for PET imaging of prostate-specific membrane antigen (PSMA): Synthesis and validation of [¹⁸F]SiFA-PSMA compounds in a preclinical prostate cancer model. *J. Med. Chem.* 2021, 64, 15671-15689.
185. D. J. Perez, S. A. Tabatabaei Dakhili, C. Bergman, M. Wuest, F. Wuest, C. A. Velázquez-Martínez. FOXM1 inhibitors as potential diagnostic agents: proof-of-concept supporting the FOXM1 protein as a PET probe to detect triple negative-breast cancer. *ChemMedChem*. 2021, 16, 3720-3729.
184. J. J. Bailey, M. Wuest, T. Bojovik, T. Kronemann, C. Wängler, B. Wängler, F. Wuest, R. Schirmacher. Towards Tadalafil-based ¹⁸F-radiotracers for in vivo PDE5 PET imaging: First results, observations, and conclusions. *ACS Omega*. 2021, 6, 21741-21754.
183. F. Francis, F. Wuest. Advances in [¹⁸F]trifluoromethylation chemistry for PET imaging. *Molecules*. 2021, 26, 6478.
182. M. Litchfield, M. Wuest, D. Glubrecht, E. Briard, Y. P. Auberson, T. McMullen, D. Brindley, F. Wuest. PET Imaging of autotaxin in thyroid and breast cancer models using [¹⁸F]PRIMATX. *Mol. Pharm.* 2021, 18, 3352-3364.
181. F. D. Juengling, A. Maldonado, F. Wuest, T. H. Schindler. Identify. Quantify. Predict. Why Immunologists Should Widely Use Molecular Imaging for Coronavirus Disease. *Front. Immunol.* 2019, 12, 568959.
180. J. Kaur, A. Bhardwaj, F. Wuest. In cellulo generation of a fluorescence probe for live cell imaging of cyclooxygenase-2. *Chemistry*. 2021, 27, 3326-3337.
179. J. Kaur, A. Bhardwaj, F. Wuest. Development of fluorescence imaging probes for labeling COX-1 in live ovarian cancer cells. *ACS Med. Chem. Lett.* 2021, 12, 798-804.
178. A. Ekanayake, R. Mukherjee, L. Sobze, J. Youk, F. Wuest, L. Vuković, R. Derda. Genetically encoded fragment-based discovery (GE-FBD) from phage-displayed macrocyclic libraries with genetically-encoded unnatural pharmacophores. *J. Am. Chem. Soc.* 2021, 143, 5497-5507.
177. R. Yuen, M. Wagner, S. Richter, J. Dufour, M. Wuest, F. G. West, F. Wuest. Design, synthesis, and evaluation of positron emission tomography/fluorescence dual imaging probes for targeting facilitated glucose transporter 1 (GLUT1). *Org. Biomol. Chem.* 2021, 19, 3241-3254.

176. T. Vahedpour, J. Kaur, M. Hamzeh-Mivehroud, A. Akbar Alizadeh, S. Hemmatti, F. Wuest, S. Dastmalchi. Synthesis and biological evaluation of novel analogues of 2-pyrazoline containing methylsulfonyl as cyclooxygenase-2 inhibitors with antiproliferative effect. *Chem. Biodivers.* 2021, 18(3):e2000832.
175. B. J. Al-Hourani, M. I. El-Barghouthi, W. Al-Awaida, R. McDonald, F. El Soubani, K. Matalka, F. Wuest. Biomolecular docking, synthesis, crystal structure, and bioassay studies of 1-[4-(2-chloroethoxy)phenyl]-5-[4-(methylsulfonyl)phenyl]-1H-tetrazole and 2-(4-(5-(4-(methylsulfonyl)-phenyl)-1H-tetrazol-1-yl)phenoxy)ethyl nitrate. *J. Mol. Struct.* 2020, 1202, 127323.
174. A. Ekanayake, R. Mukherjee, L. Sobze, J. Youk, F. Wuest, R. Derda. Genetically encoded fragment-based discovery (GE-FBD) from phage-displayed macrocyclic libraries with genetically-encoded unnatural pharmacophores. *J. Am. Chem. Soc.* 2021, 143, 5497-5507.
173. R. Yuen, M. Wagner, S. Richter, J. Dufour, M. Wuest, F. G. West, F. Wuest. Towards the design, synthesis, and evaluation of dual-probes for targeting facilitated glucose transporter 1 (GLUT1) for positron emission tomography/fluorescence imaging. *Org. Biomol. Chem.* 2021, 19, 3241-3254.
172. T. Vahedpour, J. Kaur, M. Hamzeh-Mivehroud, A. Akbar Alizadeh, S. Hemmatti, F. Wuest, S. Dastmalchi. Synthesis and biological evaluation of novel analogues of 2-pyrazoline containing methylsulfonyl as cyclooxygenase-2 inhibitors with antiproliferative effect. *Chem. Biodivers.* 2021, 18(3):e2000832.
171. B.J.B. Nelson, J.D. Andersson, F. Wuest. Targeted alpha-therapy: Progress in radionuclide production, radiochemistry, and applications. *Pharmaceutics.* 2020, 13, 49.
170. B. J. B. Nelson, J. Wilson, J. D. Andersson, F. Wuest. A Novel Lanthanum Theranostic Pair for Nuclear Medicine: High Yield Cyclotron Production of ¹³³/135La. *Sci. Rep.* 2020, 10, 22203.
169. P. Kedariseti, V. Bouvet, W. Shi, C. Bergman, K. L. Bell, R. J. Paproski, J. D. Lewis, F. Wuest, R. J. Zemp. Enrichment and Ratiometric Detection of Circulating Tumor Cells using PSMA- and Folate Receptor-Targeted Magnetic and Surface-Enhanced Raman Scattering Nanoparticles. *Biomed. Opt. Express.* 2020, 11, 6211-6230.
168. S. Ferguson, M. Wuest, C. Bergman, J. Dufour, D. Krysz, S. Richter, J. Simone, T. Riauka, H.-S. Jans, F. Wuest. PET Imaging of ^{44g}Sc and ⁶⁸Ga complexes with metabolically stabilized bombesin derivatives in breast and prostate cancer models. *Nucl. Med. Biol.* 2020, 90-91, 74-83.
167. J. Kaur, A. Bhardwaj, F. Wuest. *In cellulo* generation of a fluorescence probe for live cell imaging of cyclooxygenase-2. *Chemistry.* 2021, 27, 3326-3337.
166. D. Krysz, S. Mattingly, D. Glubrecht, M. Wuest, F. Wuest. PET imaging of amino acid transporters LAT1 and xc(-) with [¹⁸F]FDOPA and [¹⁸F]FSPG in breast cancer models. *Mol. Imaging & Biol.* 2020, 22, 1562-1571.
165. L. B. Saito, J. Fernandes, M. J. Smith, W.G. Branton, L. Schmitt, M. Wuest, M. C. Monaco, E. O. Major, F. Wuest, C. Power. Intranasal anti-caspase-1 therapy preserves myelin and glucose metabolism in a model of progressive multiple sclerosis. *Glia.* 2020, 69, 216-229.
164. M. Wagner, M. Wuest, D. Glubrecht, J. Dufour, H.-S. Jans, F. Wuest, T. McMullen. Tyrosine kinase inhibitor therapy and metabolic re-modeling in papillary thyroid cancer. *Endocrine-relat. Cancer.* 2020, 27, 495-507.
163. F. D. Juengling, A. Maldonado, F. Wuest, T. H. Schindler. The role of Nuclear Medicine for COVID-19 - Time to act now. *J. Nucl. Med.* 2020, 61, 781-782.
162. G. Meng, M. Wuest, X. Tang, J. Dufour, T. P. McMullen, F. Wuest, D. Murray, D. N. Brindley. Dexamethasone decreases radiation-induced fibrosis in breast tissue and lungs by decreasing the activation of the autotaxin-lysophosphatidate-inflammatory cycle. *Cancers.* 2020, 12, E999.

161. I. Paiva, S. Mattingly, M. Wuest, M. Weinfeld, A. Lavasanifar, F. Wuest. Synthesis and in vivo analysis of ⁶⁴Cu-labeled EGFR-targeting GE-11 peptide modified polymeric micellar nanoparticles. *Mol. Pharm.* 2020, 17, 1470-1481.
160. M. Wagner, M. Wuest, D. Glubrecht, J. Dufour, H.-S. Jans, F. Wuest, T. McMullen. Tyrosine kinase inhibitor therapy and metabolic re-modeling in papillary thyroid cancer. *Endocrine-relat. Cancer.* 2020, 27, 495-507.
159. S. J. Mattingly, M. Wuest, E. Fine, R. Schirmacher, F. Wuest. Synthesis and in vivo evaluation of a radiofluorinated ketone body derivative. *RSC Med. Chem.* 2020,11, 297-306.
158. B.J.B. Nelson, J. Wilson, S. Richter, J. M. Duke, M. Wuest, F. Wuest. Taking cyclotron ⁶⁸Ga production to the next level: Expeditious solid target production of ⁶⁸Ga for preparation of tumor radiotracers. *Nucl. Med. Biol.* 2020, 80, 24-31.
157. M. Litchfield, M. Wuest, D. Glubrecht, F. Wuest. Radiosynthesis and biological evaluation of [¹⁸F]Triacoxib: A new radiotracer for PET imaging of COX-2. *Mol. Pharm.* 2020, 17, 251-261.
156. S. Leier, S. Richter, M. Wuest, F. Wuest. Radiometal containing aryl diazonium salts for chemoselective bioconjugation of tyrosine residues. *ACS Omega.* 2019, 4, 22101-22107.
155. S. Ferguson, H.-S. Jans, M. Wuest, T. Riauka, F. Wuest. Comparison of scandium-44g with other PET radionuclides in pre-clinical PET phantom imaging. *EJNMMI Physics.* 2019, 6(1), 23.
154. X. Tang, M. Wuest, M. G. Benesch, J. Dufour, B. Heckmann, D. Murray, F. Wuest, D. N. Brindley. Inhibition of autotaxin with GLPG1690 increases the efficacy of radiotherapy and chemotherapy in a mouse model of breast cancer. *Mol. Cancer Ther.* 2020, 19, 63-74.
153. D. Connolly, J. Bailey, H. Ilhan, P. Bartenstein, C. Waengler, B. Waengler, M. Wuest, F. Wuest, R. Schirmacher. ¹⁸F-Labeling of radiotracers functionalized with a silicon fluoride acceptor (SiFA) for positron emission tomography. *JoEV.* 2020, Jan 11, 155.
152. B. J. Al-Hourani, M. I. El-Barghouthi, W. Al-Awaida, R. McDonald, F. El Soubani, K. Matalka, F. Wuest. Biomolecular docking, synthesis, crystal structure, and bioassay studies of 1-[4-(2-chloroethoxy)phenyl]-5-[4-(methylsulfonyl)phenyl]-1H-tetrazole and 2-(4-(5-(4-(methylsulfonyl)-phenyl)-1H-tetrazol-1-yl)phenoxy)-ethyl nitrate. *J. Mol. Struct.* 2020, 1202, 127323.
151. D. Krys, I. Hamann, M. Wuest, F. Wuest. Effect of hypoxia on human equilibrative nucleoside transporters hENT1 and hENT2 in breast cancer analyzed with [¹⁸F]FLT-PET. *FASEB J.* 2019, 33, 13837-13851.
150. G. Meng, M. Wuest, X. Tang, J. Dufour, Y. Y. Zhao, J. M. Curtis, D. Murray, T. P.W. McMullen, F. Wuest, D. N. Brindley. Repeated fractions of radiation to the breast fat pads of mice amplify activation of the autotaxin-lysophosphatidate-inflammatory cycle. *Cancers.* 2019, 11, 1816.
149. S. J. Mattingly, F. Wuest, R. Schirmacher. Synthesis of 2-fluoroacetoacetic acid and 4-fluoro-3-hydroxybutyric acid. *Synthesis.* 2019, 51, 2351-2358.
148. M. Wuest, A. Perreault, S. Richter, J. C. Knight, F. Wuest. Targeting Phosphatidylserine for Radionuclide-based Molecular Imaging of Apoptosis. *Apoptosis.* 2019, 24, 221-244.
147. J. Urkow, C. Bergman, F. Wuest. Sulfo-click reaction with ¹⁸F-labeled thio acids. *Chem. Commun.* 2019, 55, 1310-1313.
146. O. Tietz, A. Marshall, C. Bergman, M. Wuest, F. Wuest. Impact of Structural Alterations on the Radiopharmacological Profile of ¹⁸F-labeled Pyrimidines as Cyclooxygenase-2 (COX-2) Imaging Agents. *Nucl. Med. Biol.* 2018, 62-63, 9-17.
145. I. Hamann, D. Krys, V. Bouvet, D. Glubrecht, A. Marshall, C. Bergman, L. Vos, J. R. Mackey, M. Wuest, F. Wuest. Imaging hypoxia-driven regulation of metabolic markers in breast cancer: Role of GLUT1, GLUT2 and GLUT5. *FASEB J.* 2018, 32, 5104-5118.

144. B. J. Al-Hourani, B. F. Ali, Z. Judeh, M. I. El-Barghouthi, W. Al-Awaida, Y. Snobar, F. El Soubani, K. Matalqah, F. Wuest. Unexpected formation of 1-[4-chloromethylphenyl]-5-[4-(methylsulfonyl)benzyl]-1H-tetrazole and 1-[4-chloromethylphenyl]-5-[4-(aminosulfonyl)phenyl]-1H-tetrazole: Crystal structure, bioassay screening and molecular docking studies. *J. Mol. Struct.* 2018, 1164, 317-327.
143. M. Wagner, M. Wuest, I. Hamann, A. Lopez-Campistrous, T. McMullen, F. Wuest. Molecular imaging of platelet-derived growth factor receptor-alpha (PDGFR α) in papillary thyroid cancer using immuno-PET. *Nucl. Med. Biol.* 2018, 58, 51-58.
142. M. Wuest, I. Hamann, V. Bouvet, D. Glubrecht, A. Marshall, B. Trayner, O.-M. Soueidan, D. Krys, M. Wagner, C. Cheeseman, F. West, F. Wuest. Molecular Imaging of GLUT1 and GLUT5 in Breast Cancer: A Multitracer PET Imaging Study in Mice. *Mol. Pharmacol.* 2018 93, 79-89.
141. S. Berke, A.-L. Kampmann, M. Wuest, J. J. Bailey, B. Glowacki F. Wuest, K. Jurkschat, R. Weberskirch, R. Schirrmacher. 18F-Radiolabeling and In Vivo Analysis of SiFA-derivatized Polymeric Core-Shell Nanoparticles. *Bioconjug. Chem.* 2018, 29, 89-95.
140. T. Kniess, M. Laube, F. Wuest, J. Pietzsch. Technetium-99m based Small Molecule Radiopharmaceuticals and Radiotracers Targeting Inflammation and Infection. *Dalton Trans.* 2017, 46, 14435-14451.
139. V. Bouvet, M. Wuest, J. Bailey, C. Bergman, N. Janzen, J. F. Valliant, F. Wuest. Targeting prostate-specific membrane antigen (PSMA) with 18F-labeled compounds: The influence of prosthetic groups on tumor uptake and clearance profile. *Mol. Imaging Biol.* 2017, 19, 923-932.
138. G. Meng, X. Tang, Z. Yang, M. M. Benesch, A. Marshall, D. Murray, D. G. Hemmings, F. Wuest, T. P. McMullen, D. N. Brindley. Implications for breast cancer treatment from increased autotaxin production in adipose tissue after radiotherapy. *FASEB J.* 2017, 31, 4064-4077.
137. O.-M. Soueidan, T. W. Scully, J. Kaur, R. Panigrahi, A. Belovodskiy, V. Do, C. Matier, J. Lemieux, F. Wuest, C. I. Cheeseman, F. G. West. Fluorescent hexose derivatives establish stringent stereochemical requirement by GLUT5 for recognition and transport of monosaccharides. *ACS Chem. Biol.* 2017, 12, 1087-1094.
136. A. Bhardwaj, J. Kaur, M. Wuest, F. Wuest. In Situ Click Chemistry Generation of Cyclooxygenase-2 Inhibitors. *Nature Commun.* 2017, 8, 1.
135. S. Sharma, M. Wuest, J. D. Way, V. R. Bouvet, M. Wang, F. Wuest. Synthesis and Pre-clinical Evaluation of an 18F-labeled Single-Chain Antibody Fragment for the PET Imaging of Epithelial Ovarian Cancer. *Am. J. Nucl. Med. Mol. Imaging.* 2016, 6, 185-198.
134. Baker J. Al-Hourani, M. I. El-Barghouthi, R. McDonald, Wajdy Al-Awaida, S. Sharma, F. Wuest. Synthesis and crystal structure of N-[(dimethylamino)methylidene]-4-[1-(4-nitrophenyl)-1H-tetrazol-5-yl]-benzene-sulfonamide: Molecular docking and bioassay studies as cyclooxygenase-2 inhibitor. *J. Mol. Struct.* 2016, 1119, 220-226.
133. O. Tietz, J. Kaur, A. Bhardwaj, F. Wuest. Pyrimidine-based novel fluorescent COX-2 inhibitors: Synthesis and biological evaluation. *Org. Biomol. Chem.* 2016, 14, 7250-7257.
132. S. Richter, M. Wuest, C. N. Bergman, S. Krieger, B. E. Rogers, F. Wuest. Metabolically-stabilized 68Ga-NOTA-bombesin for PET Imaging of prostate cancer and influence of protease inhibitor Phosphoramidon. *Mol. Pharmaceutics.* 2016, 13, 1347-1357.
131. V. Bouvet, M. Wuest, H.-S. Jans, N. Janzen, A. R. Genady, J. F. Valliant, F. Benard, F. Wuest. Automated synthesis of [18F]DCFPyL via direct radiofluorination and radiopharmacological evaluation in preclinical prostate cancer models. *EJNMMI Res.* 2016, 6, 40.
130. A. Perreault, S. Richter, C. Bergman, M. Wuest, F. Wuest. Targeting phosphatidylserine with a 64Cu-labelled peptide for molecular imaging of apoptosis. *Mol. Pharmaceutics.* 2016, 13, 3564-3577.

129. S. Sharma, K. K. Sevak, S. Monette, S. D. Carlin, J. C. Knight, F. Wuest, E. Sala, B. M. Zeglis, J. S. Lewis Preclinical ⁸⁹Zr-immunoPET of High Grade Serous Ovarian Cancer and Lymph Node Metastasis. *J. Nucl. Med.* 2016, 57, 771-776.
128. Baker J. Al-Hourani, W. Al-Awaida, K. Z. Matalaka, M. I. El-Barghouthi, F. Al Soubani, F. Wuest. Structure-activity relationship of novel series of 1,5-disubstituted tetrazoles as cyclooxygenase-2 inhibitors: Design, synthesis, bioassay screening and molecular docking studies. *Bioorg. Med. Chem. Lett. Bioorg. Med. Chem. Lett.* 2016, 26, 4757-4762.
127. A. Perreault, J. Knight, M. Wang, J. Way, F. Wuest. ¹⁸F-Labeled wild-type annexin V: Comparison of random and site-selective labeling approaches. *Amino Acids.* 2016, 48, 65-74.
126. O. Tietz, M. Wuest, A. Marshall, D. Glubrecht, I. Hamann, M. Wang, C. Bergman, J. Way, F. Wuest. PET imaging of cyclooxygenase-2 (COX-2) in a colon cancer model. *EJNMMI Res.* 2016, 6, 37.
125. O. Tietz, J. Dzandzi, A. Bhardwaj, J. F. Valliant, F. Wuest. Design and synthesis of [¹²⁵I]Pyricoxib: A novel ¹²⁵I-labelled cyclooxygenase-2 (COX-2) inhibitor. *Bioorg. Med. Chem. Lett.* 2016, 26, 1516-1520.
124. Y. Yang, S. Richter, F. Wuest, M. R. Doschak. Synthesis and Structural Identification of Fluorine-18 Labelled Parathyroid Hormone. *J. Label. Compds. Radiopharm.* 2015, 58, 453-457.
123. V. Bernard-Gauthier, J. Bailey, A. Aliaga, A. Kostikov, P. Rosa-Neto, M. Wuest, G. Brodeur, F. Wuest, R. Schirmacher. Development of Subnanomolar Fluorinated (2-Pyrrolidin-1-yl)imidazo[1,2-b]pyridazine pan-Trk Radiolabeled Inhibitors as Candidate PET Imaging Probes. *Med. Chem. Commun.* 2015, 6, 2184-2193.
122. B. J. Al-Hourani, M. I. El-Barghouthi, R. McDonald, W. Al-Awaida, F. Wuest. Docking studies and the crystal structure of two tetrazole derivatives: 5-(4-chlorophenyl)-1-{4-(methylsulfonyl)phenyl}-1H-tetrazole and 4-{5-(4-methoxyphenyl)-1H-tetrazol-1-yl}benzene-sulfonamide. *J. Mol. Struct.* 2015, 1101, 21-27.
121. J. Kaur, O. Tietz, A. Bhardwaj, A. Marshall, J. Way, M. Wuest, F. Wuest. Design, synthesis and evaluation of ¹⁸F-labelled radiotracers based on Celecoxib-NBD for PET imaging of cyclooxygenase-2 (COX-2). *ChemMedChem.* 2015, 10, 1635-40.
120. B. J. Al-Hourani, R. McDonald, M. I. El-Barghouthi, W. Al-Awaida, S. Sharma, F. Wuest. Molecular Docking Studies and X-ray Structure Determination of 1-{4-(Methylsulfonyl)phenyl}-5-phenyl-1H-tetrazole. *Jordan J. Chem.* 2015, 10, 34-40.
119. M. Wuest, A. Perrault, J. Kaptzy, S. Richter, C. Foerster, C. Bergman, J. Way, J. Mercer, F. Wuest. Radiopharmacological evaluation of ¹⁸F-labeled phosphatidylserine-binding peptides for molecular imaging of apoptosis. *Nucl. Med. Biol.* 2015, 42, 864-874.
118. Olivier-Mohamad Soueidan, B. J. Trayner, J. R. Henderson, T. N. Grant, F. Wuest, F. G. West, C. I. Cheeseman. New fluorinated fructose analogs as probes for the hexose transporter protein GLUT5. *Org. Biomol. Chem.* 2015, 13, 6511-6521.
117. M. Wuest, M. Kuchar, S. Sharma, S. Richter, M. Wang, L. Vos, J. R. Mackey, F. Wuest, R. Loeser. Targeting lysyloxidase for molecular imaging in breast cancer. *Breast Cancer Res.* 2015, 17, 107.
116. M. Laube, C. Gassner, S. Sharma, R. Günther, A. Pigorsch, M. Köckerling, F. Wuest, J. Pietzsch, T. Kniess. Diaryl-substituted (dihydro)pyrrolo[3,2,1-hi]indoles, a new class of COX-2 inhibitors - Synthesis, COX inhibition potency and structure affinity determination. *J. Org. Chem.* 2015, 80, 5611-5624.
115. J. D. Way, C. Bergman, F. Wuest. Sonogashira cross-coupling reaction with 4-[¹⁸F]fluoro-iodobenzene for ¹⁸F-labelling of peptides. *Chem. Commun.* 2015, 51, 3838-3841.

114. S. Richter, M. Wuest, C. N. Bergman, J. D. Way, Stephanie Krieger, B. E. Rogers, F. Wuest. Re-routing the metabolic pathway of ¹⁸F-labelled peptides: The influence of prosthetic groups. *Bioconjugate Chem.* 2015, 26, 201-212.
113. Baker J. Al-Hourani, S. Sharma, J. Kaur, F. Wuest. Synthesis, bioassay studies, and molecular docking of novel 5-substituted 1H-tetrazoles as cyclooxygenase-2 (COX-2) inhibitors. *Med. Chem. Res.* 2015, 24, 78–85.
112. M. Laube, C. Tondera, S. Sharma, N. Bechmann, F.-J. Pietzsch, A. Pigorsch, M. Köckerling, F. Wuest, J. Pietzsch, T. Kniess. COX-2 Inhibitors based on 2,3-Diaryl-substituted Indoles – Synthesis, Inhibitory Activity and SAR Studies. *RSC Adv.* 2014, 4, 38726-38742.
111. C. Foerster, J. C. Knight, M. Wuest, B. Rowan, S. E. Lapi, A. J. Amoroso, P. G. Edwards, F. Wuest. Synthesis, complex stability and small animal PET imaging of a novel ⁶⁴Cu-labelled cryptand molecule. *Med. Chem. Commun.* 2014, 5, 958–962.
110. S. Richter, F. Wuest. ¹⁸F-labeled peptides: The future is bright. *Molecules.* 2014, 19, 20536-20556.
109. S. Sharma, M. Wuest, M. Wang, D. Glubrecht, S. E. Lapi, F. Wuest. Immuno-PET of Epithelial Ovarian Cancer: Harnessing the potential of CA125 for non-invasive imaging. *EJNMMI Res.* 2014, 4, 60.
108. S. Sharma, M. R. Suresh, F. Wuest. Improved soluble expression of a single-chain antibody fragment in *E. coli* for targeting CA125 in epithelial ovarian cancer. *Protein Expr. Purif.* 2014, 102, 27-37.
107. J. D. Way, M. Wang, M. Wuest, F. Wuest. Synthesis and evaluation of 2-amino-5-(4-[¹⁸F]fluorophenyl)pent-4-ynoic acid ([¹⁸F]FPhPA): A novel ¹⁸F-labeled amino acid for oncologic PET imaging. *Nucl. Med. Biol.* 2014, 41, 660-669.
106. A. Bhardwaj, J. Kaur, F. Wuest, E. E. Knaus. The Implication of Nitric Oxide for the Management of Cardiovascular Risks in Diabetes. *Expert Rev. Cardiovasc. Ther.* 2014, 12, 533–536.
105. V. Bouvet, M. Wuest, H. S. Jans, O. M. Soueidan, J. Mercer, A.J.B. McEwan, F. G. West, C. I. Cheeseman, F. Wuest. Automated synthesis and dosimetry of 6-deoxy-6-[¹⁸F]fluoro-D-fructose (6-[¹⁸F]FDF): A radiotracer for imaging of GLUT5 in breast cancer. *Am. J. Nucl. Med. Mol. Imaging.* 2014, 4, 248-259.
104. J. D. Way, F. Wuest. Automated radiosynthesis of no-carrier added 4-[¹⁸F]fluoriodobenzene: A versatile building block in ¹⁸F radiochemistry. *J. Label. Compds. Radiopharm.* 2014, 57, 104-109.
103. A. Bhardwaj, J. Kaur, F. Wuest, E. E. Knaus. Fluorophore-labeled Cyclooxygenase-2 Inhibitors for the Imaging of Cyclooxygenase-2 Overexpression in Cancer: Synthesis and Biological Studies. *ChemMedChem.* 2014, 9, 109-116.
102. V. R. Bouvet, F. Wuest. Application of [¹⁸F]FDG in radiolabeling reactions using microfluidic technology. *Lab Chip.* 2013, 13, 4290-4294.
101. O. Tietz, A. Marshall, M. Wuest, M. Wang, F. Wuest. Radiotracers for molecular imaging of cyclooxygenase-2 (COX-2) enzyme. *Curr. Med. Chem.* 2013, 20, 4350-4369.
100. J. C. Knight, S. Richter, M. Wuest, J. D. Way, F. Wuest. Synthesis and Evaluation of an ¹⁸F-Labelled Norbornene Derivative for Rapid, Copper-Free Click Chemistry Reactions. *Org. Biomol. Chem.* 2013, 11, 3817-3825.
99. J. C. Knight, M. Wuest, F. A. Saad, M. Wang, D. W. Chapman, H.-S. Jans, S. E. Lapi, B. M. Kariuki, A. J. Amoroso, F. Wuest. Synthesis, characterisation and evaluation of a novel copper-⁶⁴ complex with uptake on EMT-6 cells under hypoxic conditions. *Dalton Transactions.* 2013, 42, 12005-12014.
98. J. Kaur, A. Bhardwaj, S. Sharma, F. Wuest. 1,4-Diaryl-substituted triazoles as cyclooxygenase-2 inhibitors: Synthesis, biological evaluation and molecular modeling studies. *Bioorg. Med. Chem.* 2013, 21, 4288–4295.

97. S. Richter, M. Wuest, S. S. Krieger, B. E. Rogers, M. Friebe, R. Bergmann, F. Wuest. Synthesis and radiopharmacological evaluation of a high affinity and metabolically stabilized ¹⁸F-labelled bombesin analogue for molecular imaging of GRP receptor-expressing prostate cancer. *Nucl. Med. Biol.* 2013, 40, 1025-1034.
96. J. Way, F. Wuest. Fully automated synthesis of 4-[¹⁸F]fluorobenzylamine based on borohydride/NiCl₂ reduction. *Nucl. Med. Biol.* 2013, 40, 430-436.
95. T. Ramenda, J. Steinbach, F. Wuest. 4-[¹⁸F]Fluoro-N-methyl-N-(propyl-2-yn-1-yl)benzene-sulfonamide ([¹⁸F]F-SA): A versatile building block for labeling of peptides, proteins and oligonucleotides with fluorine-18 via Cu(I)-mediated click chemistry. *Amino Acids.* 2013, 44, 1167-1180.
94. O. Tietz, S. Sharma, J. Kaur, J. Way, F. Wuest. Synthesis of three novel ¹⁸F-labelled cyclooxygenase-2 (COX-2) inhibitors based on a pyrimidine scaffold. *Org. Biomol. Chem.* 2013, 11, 8052–8064.
93. A. Bhardwaj, J. Kaur, S. Sharma, Z. Huang, F. Wuest, E. E. Knaus. Hybrid Fluorescent Conjugates of COX-2 Inhibitors: Search for a COX-2 Isoenzyme Imaging Cancer Biomarker. *Bioorg. Med. Chem. Lett.* 2013, 23, 163-168.
92. M. Wuest, F. Wuest. PET radiotracers for hypoxia imaging. *J. Label Compds. Radiopharm.* 2013, 56, 244-250.
91. J. Way, V. Bouvet, F. Wuest. Application of palladium-mediated cross-coupling reactions for the synthesis of ¹⁸F-labeled compounds. *Curr. Org. Chem.* 2013, 17, 2138-2152.
90. S. Richter, V. Bouvet, M. Wuest, R. Bergmann, J. Steinbach, J. Pietzsch, I. Neundorff, F. Wuest. ¹⁸F-Labeled phosphopeptide-cell-penetrating peptide dimers with enhanced cell uptake properties in human cancer cells. *Nucl. Med. Biol.* 2012, 39, 1202-1212.
89. J. C. Knight, F. Wuest. Nuclear (PET/SPECT) and optical imaging probes targeting the CXCR4 chemokine receptor. *Med. Chem. Commun.* 2012, 3, 1039-1053.
88. F. Wuest, V. Bouvet, BaoChan Mai, P. LaPointe. Fluorine- and rhenium-containing geldanamycin derivatives as leads for the development of molecular probes for imaging Hsp90. *Org. Biomol. Chem.* 2012, 10, 6724-6731.
87. T. Kniess, M. Laube, R. Bergmann, F. Graf, J. Steinbach, F. Wuest, J. Pietzsch. Radiosynthesis of a ¹⁸F-labeled 2,3-diarylsubstituted indole via McMurry coupling for functional characterization of cyclooxygenase-2 (COX-2) in vitro and in vivo. *Bioorg. Med. Chem.* 2012, 20, 3410-3421.
86. S. Sharma, B. Jawabrah Al-Hourani, M. Wuest, J. Y. Mane, J. Tuszynski, V. Baracos, M. Suresh, F. Wuest. Synthesis and evaluation of fluorobenzoylated di- and tripeptides as inhibitors of cyclooxygenase-2 (COX-2). *Bioorg. Med. Chem.* 2012, 20, 2221-2226.
85. B. J. Al-Hourani, S. Sharma, M. Suresh, F. Wuest. Novel 5-Substituted 1H-tetrazoles as cyclooxygenase-2 (COX-2) inhibitors. *Bioorg. Med. Chem. Lett.* 2012, 22, 2235-2238.
84. V. Bouvet, M. Wuest, P.-H. Tam, M. Wang, F. Wuest. Microfluidic technology: An economical and versatile approach for the synthesis of O-(2-[¹⁸F]fluoroethyl)-L-tyrosine. *Bioorg. Med. Chem. Lett.* 2012, 22, 2291-2295.
83. A. DeSilva, M. Wuest, M. Wang, J. Hummel, K. Mossman, F. Wuest, M. M. Hitt. Comparative functional evaluation of immunocompetent mouse breast cancer models established from PyMT-tumors using small animal PET with [¹⁸F]FDG and [¹⁸F]FLT. *Am. J. Nucl. Med. Mol. Imaging.* 2012, 2, 88-98.
82. F. Svensson, T. Kniess, R. Bergmann, J. Pietzsch, F. Wuest. Synthesis of a ¹⁸F-labeled cyclin-dependent kinase 2 (CDK-2) inhibitor for positron emission tomography (PET). *J. Label Compds. Radiopharm.* 2011, 54, 769–774.
81. V. Bouvet, M. Wuest, F. Wuest. Copper-free click chemistry with the short-lived positron emitter fluorine-18. *Org. Biomol. Chem.* 2011, 9, 7393-7399.

80. B. J. Al-Hourani, S. Sharma, M. Suresh, F. Wuest. COX-2 inhibitors: A literature and patent review (2009-2010). *Expert Opin. Ther. Patents*. 2011, 9, 1339-1432.
79. S. Richter, I. Neundorf, K. Loebner, M. Graeber, T. Berg, R. Bergmann, J. Steinbach, J. Pietzsch, F. Wuest. Phosphopeptides with improved cellular uptake properties as ligands for the polo-box domain of polo-like kinase 1. *Bioorg. Med. Chem. Lett.* 2011, 21, 4686-4689.
78. J. Kaptý, T. Kniess, F. Wuest, J. Mercer. Radiolabelling of phosphatidylserine-binding peptides with prosthetic groups N-[6-(4-[¹⁸F]fluorobenzylidene)aminoxyhexyl]maleimide ([¹⁸F]FBAM) and N-succinimidyl-4-[¹⁸F]fluorobenzoate ([¹⁸F]SFB). *Appl. Radiat. Isotop.* 2011, 69, 1218-1225.
77. P. Grosse-Gehling, F. Wuest, C. Mamat. 1-(3-[¹⁸F]Fluoropropyl)-4-(4-nitrophenyl)piperazine as a model compound for the radiofluorination of pyrido[2,3-d]pyrimidines. *Radiochim. Acta.* 2011, 99, 365-373.
76. K. Gagnon, S. McQuarrie, D. Abrams, A. J. McEwan, F. Wuest. Radiotracers based on technetium-94m. *Current Radiopharm.* 2011, 4, 90-101.
75. M. Wuest, B. J. Trayner, T. N. Grant, H.-S. Jans, J. Mercer, D. Murray, F. G. West, A. J. McEwan, F. Wuest, C. I. Cheeseman. Radiopharmacological evaluation of 6-deoxy-6-[¹⁸F]fluoro-D-fructose as a radiotracer for PET imaging of GLUT5 in breast cancer. *Nucl. Med. Biol.* 2011, 38, 461-475.
74. B. J. Al-Hourani, S. Sharma, J. Y. Mane, J. Tuszyński, V. Baracos, T. Kniess, M. Suresh, J. Pietzsch, F. Wuest. Synthesis and evaluation of 1,5-diaryl-substituted tetrazoles as novel selective cyclooxygenase-2 (COX-2) inhibitors. *Bioorg. Med. Chem. Lett.* 2011, 21, 1823-1826.
73. V. R. Bouvet, M. Wuest, L. I. Wiebe, F. Wuest. Synthesis of hypoxia imaging agent 1-(5-deoxy-5-fluoro- α -D-arabinofuranosyl)-2-nitroimidazole [¹⁸F]FAZA using microfluidic technology. *Nucl. Med. Biol.* 2011, 38, 335-345.
72. M. Pretze, F. Wuest, T. Peppel, M. Köckerling, C. Mamat. The Traceless Staudinger Ligation with Fluorine-18: A Novel and Versatile Labeling Technique for the Synthesis of Radiotracers for Positron Emission Tomography (PET). *Tetrahedron Lett.* 2010, 51, 6410-6414.
71. I. Koslowsky, J. Mercer, F. Wuest. Synthesis and application of 4-[¹⁸F]fluorobenzylamine: A versatile building block for the preparation of PET radiotracers. *Org. Biomol. Chem.* 2010, 8, 4730-4735.
70. F. Graf, B. Mosch, L. Koehler, R. Bergmann, F. Wuest, J. Pietzsch. Cdk4/6 inhibitors: perspectives in cancer therapy and imaging. *Mini Rev. Med. Chem.* 2010, 10, 527-539.
69. S. Richter, T. Ramenda, R. Bergmann, T. Kniess, J. Steinbach, J. Pietzsch, F. Wuest. Synthesis and evaluation of phosphopeptide-neurotensin(8-13) dimers via click chemistry. *Bioorg. Med. Chem. Lett.* 2010, 20, 3306-3309.
68. L. Koehler, K. Gagnon, S. McQuarrie, F. Wuest. Iodine-124: A promising iodine radioisotope for positron emission tomography (PET). *Molecules.* 2010, 15, 2686-2718.
67. L. Koehler, F. Graf, R. Bergmann, J. Steinbach, J. Pietzsch, F. Wuest. Synthesis and radiopharmacological evaluation of ¹²⁴I-labeled CDK4 inhibitors. *Eur. J. Med. Chem.* 2010, 45, 727-737.
66. F. Graf, L. Koehler, T. Kniess, F. Wuest, B. Mosch, J. Pietzsch. Cell cycle regulating kinase Cdk4 as a potential target for tumor cell treatment and tumor imaging. *J. Oncol.* 2009, 106378, 1-12.
65. T. Ramenda, T. Kniess, R. Bergmann, J. Steinbach, F. Wuest. Radiolabelling of proteins with fluorine-18 via click chemistry. *Chem. Comm.* 2009, 48, 7521-7523.
64. S. Richter, R. Bergmann, J. Pietzsch, T. Ramenda, J. Steinbach, F. Wuest. Fluorine-18 labeling of phosphopeptides: A potential approach for the evaluation of phosphopeptide metabolism in vivo. *Biopolymers.* 2009, 92, 479-488.

63. T. Kniess, R. Bergmann, M. Kuchar, F. Wuest. Synthesis of a potential tyrosine kinase inhibitor by Knoevenagel condensation of oxindole with 4-[18F]fluorobenzaldehyde. *Bioorg. Med. Chem.* 2009, 17, 7732-7742.
62. C. Mamat, A. Flemming, M. Köckerling, J. Steinbach, F. Wuest. Pd-catalyzed cross coupling of selected iodophenyl esters with HPPH2 for the synthesis of benzoate-functionalized phosphanes as novel building blocks for the traceless Staudinger Ligation. *Synthesis*. 2009, 19, 3311-3321.
61. F. Wuest, C. Hultsch, M. Berndt, R. Bergmann. Direct labelling of peptides with 2-[18F]fluoro-2-deoxy-D-glucose ([18F]FDG). *Bioorg. Med. Chem. Lett.* 2009, 19, 5426-5428.
60. E. von Guggenberg, J. Sader, J. Wilson, S. Shahhosseini, I. Koslowsky, F. Wuest, J. Mercer. Automated synthesis of an 18F-labelled pyridine-based alkylating agent for high yield oligonucleotide conjugation. *Appl. Radiat. Isotop.* 2009, 67, 1670-1675.
59. J. Pietzsch, F. Wuest. Fluorine-18 radiolabelling of native and oxidized proteins: An important tool in the pathophysiolgists' toolbox. *Chemistry Today*. 2009, 27, 12-14.
58. C. Mamat, T. Ramenda, F. Wuest. Application of click chemistry for the synthesis of radiotracers for molecular imaging. *Mini Rev. Org. Chem.* 2009, 6, 21-34.
57. F. Wuest, L. Vogler, M. Berndt, J. Pietzsch. Systematic Comparison of Two Novel Thiol-Reactive Prosthetic Groups for 18F Labeling of Peptides and Proteins with the Acylation Agent Succinimidyl-4-[18F]fluorobenzoate [18F]SFB. *Amino Acids*. 2009, 36, 283-295.
56. F. Wuest, L. Tang, T. Kniess, J. Pietzsch, M. Suresh. Synthesis and cyclooxygenase inhibition of various (aryl-1,2,3-triazole-1-yl)methanesulfonyl derivatives. *Bioorg. Med. Chem.* 2009, 17, 1146-1151.
55. F. Wuest, T. Kniess, B. Henry, B. W. Reeters, P. H. Wiegerinck, J. Pietzsch, R. Bergmann. Radiosynthesis and radiopharmacological evaluation of [N-methyl-11C]ORG 34850 as a glucocorticoid receptor ligand. *Appl. Radiat. Isotop.* 2009, 67, 308-312.
54. F. Wuest, T. Kniess, R. Bergmann, J. Pietzsch. Synthesis and evaluation in vitro and in vivo of a 11C-labeled cyclooxygenase-2 (COX-2) inhibitor. *Bioorg. Med. Chem.* 2008, 16, 7662-7670.
53. T. Kniess, M. Kuchar, F. Wuest. Facile synthesis of various nitro-substituted derivatives of Semaxinib (SU 5416). *Synth. Commun.* 2008, 38, 3017-3022.
52. F. Wuest, M. Berndt, R. Bergmann, J. Pietzsch. Synthesis and Application of [18F]FDG-maleimidehexyloxime ([18F]FDG-MHO): A [18F]FDG-based Prosthetic Group for the Chemoselective 18F-Labeling of Peptides and Proteins. *Bioconjugate Chem.* 2008, 19, 1202-1210.
51. B. Steiniger, T. Kniess, R. Bergmann, J. Pietzsch, F. Wuest. Radiolabeled glucocorticoids as molecular probes for imaging brain glucocorticoid receptors by means of positron-emission-tomography (PET). *Mini Rev. Med. Chem.* 2008, 8, 728-739.
50. J. Schlesinger, I. Közle, R. Bergmann, S. Tamburini, C. Bolzati, F. Tisato, B. Noll, S. Klusmann, S. Vonhoff, F. Wuest, H.-J. Pietzsch, J. Steinbach. An 86Y-Labeled Mirror-Image Oligonucleotide: Influence of Y-DOTA Isomers on the Biodistribution in Rats. *Bioconjugate Chem.* 2008, 19, 928-939.
49. S. Richter, R. Bergmann, J. Pietzsch, B. Beuthien-Baumann, F. Wuest. Radiosynthesis of n.c.a. sodium [18F]fluoroacetate and radiopharmacological characterization in rats and tumour-xenografted mice. *Current Radiopharmaceuticals*. 2008, 1, 103-109.
48. T. Kniess, K. Rode, F. Wuest. Practical experiences with the synthesis of [11C]CH3I through gas phase iodination reaction using a TRACERlabFXC synthesis module. *Appl. Radiat. Isotop.* 2008, 66, 482-488.
47. F. Füchtner, J. Zessin, P. Mäding, F. Wuest. Aspects of 6-[18F]fluoro-L-DOPA preparation: Deuteriochloroform as a substitute solvent for Freon 11. *Nuklearmedizin*. 2008, 47, 62-64.

46. F. Wuest, K. E. Carlson, J. A. Katzenellenbogen. Expeditious synthesis of steroids containing a 2-methylsulfanyl-acetyl side chain as potential glucocorticoid receptor imaging agents. *Steroids*. 2008, 73, 69-76.
45. F. Wuest, T. Kniess, J. Pietzsch, B. Henry, R. Bergmann. Synthesis and radiopharmacological characterization of [¹¹C]AL-438 as a nonsteroidal ligand for imaging brain glucocorticoid receptors. *Bioorg. Med. Chem. Lett.* 2007, 17, 4035-4039.
44. F. Wuest, M. Berndt, K. Strobel, J. van den Hoff, X. Peng, J. L. Neumeyer, R. Bergmann.. Synthesis and radiopharmacological characterization of [¹⁸F]MCL-322 as a potential PET radiotracer for imaging dopamine transporter. *Bioorg. Med. Chem.* 2007, 15, 4511-4519.
43. T. Ramenda, R. Bergmann, F. Wuest. Synthesis of 18F-labeled neurotensin(8-13) via copper-mediated 1,3-dipolar [3+2]cycloaddition reaction. *Lett. Drug Des. Discov.* 2007, 4, 279-285.
42. C. Hultsch, M. Berndt, R. Bergmann, F. Wuest. Radiolabelling of multimeric neurotensin(8-13) analogues with the short-lived positron emitter fluorine-18. *Appl. Radiat. Isotop.* 2007, 65, 818-826.
41. S. Gester, J. Pietzsch, F. Wuest. Synthesis of 18F-labelled stilbenes from 4-[¹⁸F]fluorobenzaldehyde using the Horner-Wadsworth-Emmons reaction. *J. Label. Compd. Radiopharm.* 2007, 50, 105-113.
40. M. Berndt, J. Pietzsch, F. Wuest. Labeling of low-density lipoproteins using the 18F-labeled thiol-reactive reagent N-[6-(4-[¹⁸F]fluorobenzylidene)aminooxyhexyl]-maleimide [¹⁸F]FBAM. *Nucl. Med. Biol.* 2007, 34, 5-15.
39. H. M. Bigott, R. Laforest, X. Liu, A. Ruangma, F. Wuest, M. J. Welch. Advances in the Production, Processing and MicroPET Image Quality of Technetium-94m. *Nucl. Med. Biol.* 2006, 33, 923-933.
38. B. Steiniger, F. Wuest. Synthesis of 18F-labelled biphenyls via Suzuki cross-coupling with 4-[¹⁸F]fluoriodobenzene. *J. Label. Compd. Radiopharm.* 2006, 49, 817-827.
37. C. Hultsch, B. Pawelke, R. Bergmann, F. Wuest. Synthesis and evaluation of novel multimeric Neurotensin (8-13) analogues. *Bioorg. Med. Chem.* 2006, 14, 5913-5920.
36. J. Schlesinger, R. Bergmann, S. Klussmann, F. Wuest. Synthesis and Radiopharmacological Characterisation of ⁸⁶Y- and ⁶⁸Ga-Labelled L-RNA Oligonucleotides as Molecular Probes for Positron Emission Tomography (PET). *Lett. Drug Des. Discov.* 2006, 6, 330-335.
35. P. Mäding, J. Zessin, U. Pleiß, F. Füchtner, F. Wuest. Synthesis of a ¹¹C-labelled taxane derivative by [1-¹¹C]acetylation. *J. Label. Compd. Radiopharm.* 2006, 49, 357-365.
34. F. Wuest, M. Berndt. ¹¹C-C bond formation by palladium-mediated cross-coupling of alkenylzirconocenes with [¹¹C]methyl iodide. *J. Label. Compd. Radiopharm.* 2006, 49, 91-100.
33. J. Zessin, W. Deuter-Conrad, M. Kretzschmar, P. Brust, J. Steinbach, F. Wuest, B. Pawelke, R. Bergmann. [¹¹C]SMe-ADAM, an imaging agent for the serotonin transporter: Synthesis, pharmacological characterization and microPET studies in rats. *Nucl. Med. Biol.* 2006, 33, 53-63.
32. F. Wuest. Radiopharmakaforschung: Trends und neue Konzepte. *Der Nuklearmediziner*. 2005, 4, 206-214.
31. J. Pietzsch, R. Bergmann, F. Wuest, B. Pawelke, C. Hultsch, J. van den Hoff. Catabolism of native and oxidized low density lipoproteins (LDL): in vivo insights from small animal positron emission tomography studies. *Amino Acids*. 2005, 29, 389-404.
30. C. Hultsch, R. Bergmann, B. Pawelke, J. Pietzsch, F. Wuest, B. Johannsen, T. Henle. Biodistribution and catabolism of 18F-labelled isopeptide Nε-(γ-glutamyl)-L-lysine. *Amino Acids*. 2005, 29, 405-413.

29. S. Gester, F. Wuest, B. Pawelke, R. Bergmann, J. Pietzsch. Synthesis and biodistribution of a ¹⁸F-labelled resveratrol derivative for small animal positron emission tomography (PET). *Amino Acids*. 2005, 29, 415-428.
28. F. Wuest. Aspects of positron emission tomography (PET) radiochemistry as relevant for food chemistry. *Amino Acids*. 2005, 29, 323-339.
27. J. Pietzsch, R. Bergmann, F. Wuest, J. van den Hoff. In vivo metabolism of oxidized low density lipoproteins: Insights from small animal positron emission tomography (PET) studies. *Recent Res. Devel. Mol. Cell. Biochem*. 2005, 2, 153-177.
26. P. Mäding, F. Füchtner, F. Wuest. Modul-assisted synthesis of the labelling agent [¹⁸F]SFB. *Appl. Radiat. Isotop*. 2005, 63, 329-332.
25. F. Wuest, T. Kniess, M. Kretzschmar, R. Bergmann. Synthesis and biodistribution of a ¹⁸F-labelled corticosteroid as ligand for mapping brain glucocorticoid receptors by means of PET. *Bioorg. Med. Chem. Lett*. 2005, 15, 1303-1306.
24. F. Wuest, A. Höhne, P. Metz. Synthesis of ¹⁸F-labelled COX-2 inhibitors via Stille reaction with 4-[¹⁸F]fluoriodobenzene. *Org. Biomol. Chem*. 2005, 3, 503-507.
23. F. Wuest, T. Kniess. N-arylation of indoles with 4-[¹⁸F]fluoriodobenzene Synthesis of ¹⁸F-labelled 2 receptor ligands for positron emission tomography (PET). *J. Label. Compd. Radiopharm*. 2005, 48, 31-43.
22. R. Garcia, C. Xavier, A. Paulo, I. Santos, T. Kniess, R. Bergmann, F. Wuest. Synthesis and Biological Evaluation of S-[¹¹C]Methylated Mercaptoimidazole Piperazinyl Derivatives as Potential Radioligands for Imaging 5-HT_{1A} Receptors by Positron Emission Tomography (PET). *J. Label. Compd. Radiopharm*. 2005, 48, 301-315.
21. F. Wuest, M. Müller, R. Bergmann. Synthesis of 4-([¹⁸F]fluoromethyl)-2-chlorophenyl-isothiocyanate: A novel bifunctional ¹⁸F-labelling agent. *Radiochim. Acta*. 2004, 92, 349-353.
20. F. Wuest, T. Kniess. Synthesis of [¹⁸F]-labelled nucleosides using Stille cross-coupling reactions with [4-¹⁸F]fluoriodobenzene. *J. Label. Compd. Radiopharm*. 2004, 47, 457-468.
19. F. Wuest. Rhenium- and technetium-containing steroids as ligands for the estrogen receptor, progesterone receptor and androgen receptor. *Current Topics in Steroid Research*. 2004, 4, 197-205.
18. J. Pietzsch, R. Bergmann, K. Rode, C. Hultsch, B. Pawelke, F. Wuest, J. van den Hoff. Fluorine-18 radiolabeling of low-density lipoproteins: a potential approach for characterization and differentiation of metabolism of native and oxidized low-density lipoproteins in vivo. *Nucl. Med. Biol*. 2004, 31, 1043-1050.
17. F. Wuest, C. Hultsch, R. Bergmann, T. Henle. Modified synthesis of N-succinimidyl-4-[¹⁸F]fluorobenzoate ([¹⁸F]SFB) and its application in the radiosynthesis of ¹⁸F-labelled isopeptide N ϵ -(γ -glutamyl)-L-lysine. *Appl. Radiat. Isot*. 2003, 59(1), 43-48.
16. F. Wuest, K. Carlson, J. A. Katzenellenbogen. Synthesis of novel arylpyrazolo corticosteroids as potential ligands for imaging brain glucocorticoid receptors. *Steroids*. 2003, 68(2), 177-191.
15. F. Wuest, J. Zessin, B. Johannsen. A New Approach for a ¹¹C-C Bond Formation: Synthesis of 17 α -(3'-[¹¹C]Prop-1-yn-1-yl)-3-Methoxy-3,17 β -Estradiol. *J. Label. Compd. Radiopharm*. 2003, 46, 333-342.
14. J. Pietzsch, R. Bergmann, F. Wuest. Flavonoide. Wirkmechanismen und neue Anwendungsmöglichkeiten (Teil 1). *Bioforum* 2003, 5, 289-291.
13. J. Pietzsch, R. Bergmann, F. Wuest. Flavonoide: Wirkmechanismen und neue Anwendungsmöglichkeiten (Teil 2). *Bioforum* 2003, 6, 384-385.

12. F. Wuest, T. Kniess. Synthesis of 4-[18F]fluoriodobenzene and its application in the Sonogashira cross-coupling reaction with terminal alkynes. *J. Label. Compd. Radiopharm.* 2003, 46, 699-713.
11. F. Wuest. Organic chemistry with the short-lived β^+ emitters 11C and 18F. *Trends Org. Chem.* 2003, 10, 61-70.
10. F. Wuest. The use of [99mTc]technetium-labeled steroids as probes for steroid hormone receptors. *Methods Mol. Biol.* 2001, 176, 133-143.
9. M. B. Skaddan, F. Wuest, S. Jonson, R. Syhre, M. J. Welch, H. Spies, J. A. Katzenellenbogen. Radiochemical Synthesis and Tissue Distribution of Tc-99m-Labeled 7 α -Substituted Estradiol Complexes. *Nucl. Med. Biol.* 2000, 27(3), 269-278.
8. F. Wuest, C. S. Dence, T. J. McCarthy, M. J. Welch. A New Approach for the Synthesis of [11C]-labeled fatty acids. *J. Label. Compd. Radiopharm.* 2000, 43(13), 1289-1300.
7. F. Wuest, M. B. Skaddan, P. Leibnitz, J. A. Katzenellenbogen, H. Spies, B. Johannsen. Synthesis of Novel Progestin-Rhenium Conjugates as Potential Ligands for the Progesterone Receptor. *Bioorg. Med. Chem.* 1999, 7, 1827-1835.
6. M. B. Skaddan, F. Wuest, J. A. Katzenellenbogen. Synthesis and binding affinities of novel Re-containing 7 α -substituted estradiol complexes: models for breast cancer imaging agents. *J. Org. Chem.* 1999, 64, 8108-8121.
5. F. Wuest, D. Scheller, H. Spies, B. Johannsen. Synthesis of oxorhenium(V) complexes derived from 7 α -functionalized testosterone: First rhenium-containing testosterone derivatives. *Eur. J. Inorg. Chem.* 1998, 789-793.
4. F. Wuest, K. Carlson, J. A. Katzenellenbogen, H. Spies, B. Johannsen. Synthesis and binding affinities of new 17 α -substituted estradiol-rhenium n+1 mixed-ligand and thioether-carbonyl complexes. *Steroids.* 1998, 63 (12), 665-671.
3. F. Wuest, H. Spies, B. Johannsen. Synthesis of 17 α -substituted mercaptoalkynyl derivatives of 3,17 β -estradiol. *Tetrahedron Lett.* 1997, 38(17), 2931-32.
2. M. Reisgys, F. Wuest, R. Alberto, R. Schibli, P. A. Schubiger, H.-J. Pietzsch, H. Spies, B. Johannsen. Synthesis of rhenium(I) and technetium(I) carbonyl/dithioether ligand complexes bearing 3,17 β -estradiol. *Bioorg. Med. Chem. Lett.* 1997, 7(17), 2243-2246.
1. F. Wuest, H. Spies, B. Johannsen. Synthesis of "3+1" mixed-ligand oxorhenium(V) complexes containing modified 3,17 β -estradiol. *Bioorg. Med. Chem. Lett.* 1996, 6(22), 2729-34.

2. Book chapters and monographs

10. A. Bhardwaj, F. Wuest. PET Imaging of Cyclooxygenases in Neuroinflammation. *PET and SPECT of Neurobiological Systems*, Springer 2021, Rudi AJO Dierckx, Andreas Otte, Erik FJ de Vries, Aren van Waarde, and Adriaan A. Lammertsma (Eds.). 2021, 265-293.
9. M. Wagner, F. Wuest. The Radiopharmaceutical Chemistry of Fluorine-18: Electrophilic Fluorinations. *Radiopharmaceutical Chemistry*, Springer 2019, Editors: Lewis, Jason S., Windhorst, Albert D., Zeglis, Brian M. (Eds.). 2019, 285-295.
8. F. Graf, F. Wuest, J. Pietzsch. Cyclin-Dependent Kinases (Cdk) as Targets for Cancer Therapy and Imaging. *Advances in Cancer Therapy*, Hala Gali-Muhtasib (Ed). 2011, 265-288.
7. F. Wuest, M. Berndt, T. Kniess. Palladium-mediated cross-coupling reactions with [¹¹C]methyl iodide and 4-[¹⁸F]fluorohalobenzenes for the synthesis of positron emission tomography (PET) radiotracers. *Research Signpost. Recent Advances of Bioconjugation Chemistry in Molecular Imaging*. X. Chen (Ed.). 2008, 155-173.
6. F. Wuest, M. Berndt, T. Kniess. Carbon-11 labelling chemistry based upon [¹¹C]methyl iodide. *Ernst Schering Research Foundation Workshop*, Vol. 62; Schubiger, P. August; Lehmann, Lutz; Friebe, Matthias (Eds.). 2006, 183-213.
5. F. Wuest. Fluorine-18 labelling of small molecules: The use of ¹⁸F-labelled aryl fluorides derived from no-carrier-added [¹⁸F]fluoride as labelling precursors. *Ernst Schering Research Foundation Workshop*, Vol. 62; Schubiger, P. August; Lehmann, Lutz; Friebe, Matthias (Eds.). 2006, 51-78.
4. J. Schlesinger, R. Bergmann, S. Klusmann, F. Wuest, H.-J. Pietzsch, J. Steinbach. ⁸⁶Y-Labelled L-RNA Oligonucleotides as Molecular Probes for Positron Emission Tomography (PET). In: Technetium, Rhenium and Other Metals in Chemistry and Nuclear Medicine 7. M. Mazzi, Ed., SGEEditoriali, Padova. 2006, 211-214.
3. T. J. McCarthy, D. W. McCarthy, R. Laforest, H. M. Bigott, F. Wuest, D. E. Reichert, M. R. Lewis, M. J. Welch. Non-Standard Isotope Production and Application at Washington University. *Application of Accelerators in Research and Industry*. 2001, 841-844.
2. F. Wuest, M. B. Skaddan, P. Leibnitz, J. A. Katzenellenbogen, H. Spies, B. Johannsen. Synthesis and Receptor Binding of Novel Progesterone-Rhenium Complexes. In: Technetium and Rhenium in Chemistry and Nuclear Medicine 5. M. Nicolini, M. Mazzi, M. Bandoli, Eds., SGEEditoriali, Padova. 1999, 491-496.
1. H.-J. Pietzsch, M. Reisgys, R. Alberto, A. Hoepping, M. Scheunemann, S. Seifert, F. Wuest, H. Spies, P. A. Schubiger, B. Johannsen. Thioether Ligands as Anchor Groups for Coupling the "Tc(CO)₃" and "Re(CO)₃" Moieties with Biologically Active Molecules. In: Technetium and Rhenium in Chemistry and Nuclear Medicine 5. M. Nicolini, M. Mazzi, M. Bandoli, Eds., SGEEditoriali, Padova. 1999, 313-316.

3. Peer-reviewed abstracts (Total 127, Details not listed)

Patents

CYCLOTRON TARGET AND LANTHANUM THERANOSTIC PAIR FOR NUCLEAR MEDICINE: HIGH YIELD CYCLOTRON PRODUCTION OF ¹³³/135LA FIELD.
United States. US 63/114,267. 2020/11/16.

FLUORINATED BETA-HYDROXYBUTYRIC ACIDS FOR PET IMAGING
US 16/992,940. 2020/08/13.

Selected invited talks and presentations

F. Wuest. Targeting of GLUT5: Unlocking a new door for breast cancer imaging and therapy? University of Virginia Seminar Series. Charlottesville, Virginia, USA, 2022.

F. Wuest. Immuno-PET of Epithelial Ovarian Cancer: The promise of magic bullets. CSPS/PSJ/CC-CRS Symposium, Japan, 2021.

F. Wuest. Targeting of GLUT5: Unlocking a new door for breast cancer imaging and therapy? Canadian Cancer Research Conference. Montreal, Canada, 2019.

F. Wuest. Molecules, Mice, and Men: Radionuclides for Molecular Imaging and Therapy of Prostate Cancer. Alberta College of Medical Diagnostic and Therapeutic Technologists. CONNECT, Edmonton, 2019.

F. Wuest. Transition metal-mediated chemistry with ^{11}C and ^{18}F : Groundbreaking labeling methods in PET radiochemistry. Department of Chemistry, University of Alberta, 2019.

F. Wuest. Targeting of GLUT5: Unlocking a new door for breast cancer imaging and therapy? 1st Chiba-Alberta Joint Symposium on Pharmaceuticals. Chiba University, Japan, 2019.

F. Wuest. Targeting of GLUT5: Unlocking a new door for breast cancer imaging and therapy? Leslie Dan Faculty of Pharmacy. University of Toronto. AB, 2019.

F. Wuest. Molecules, Mice and Men: Radionuclides for Molecular Imaging and Therapy of Prostate Cancer. Grand Oncology Rounds, University of Alberta, 2018.

F. Wuest. Transition metal-mediated chemistry with the short-lived positron emitters fluorine-18 and carbon-11. University of Helsinki Chemistry Seminar Series, Finland, 2018.

F. Wuest. Molecular Imaging: Tracers, Targets, Techniques. Dean's Grand Rounds Series Faculty of Pharmacy and Pharmaceutical Sciences. University of Alberta. AB, 2017.

F. Wuest. Transition metal-mediated reactions with the short-lived positron emitters fluorine-18 and carbon-11. Department of Chemistry, Western University, London, ON, 2016.

F. Wuest. Immuno-PET of Epithelial Ovarian Cancer: The Promise of Magic Bullets. Canadian Cancer Research Conference, Montreal, QC, 2015.

F. Wuest. Macromolecules and their labeling with fluorine-18. 20th International Symposium on Radiopharmaceutical Sciences, Columbia, MO, 2015.

F. Wuest. Radiolabeled peptides - Radiopharmacology. 20th International Symposium on Radiopharmaceutical Sciences, Columbia, MO, 2015.

F. Wuest. Targeting prostate-specific membrane antigen (PSMA) in prostate cancer. APCaRI 2015 Fall Meeting. Kananaskis, AB, 2015.

F. Wuest. $^{99\text{m}}\text{Tc}$ for Supply in Canada. SNMMI annual meeting, Baltimore, MD, 2015.

F. Wuest. Molecules, mice and men: Radionuclides for molecular imaging of prostate cancer. Urology Grand Rounds. University of Alberta. 2014.

F. Wuest. Immuno-PET of Epithelial Ovarian Cancer: Harnessing the potential of CA125 for non-invasive imaging. 4th International Workshop of Molecular Imaging in Life Science, Research Centre Dresden-Rossendorf, Dresden, Germany, 2014.

F. Wuest. Molecular Imaging: Tracers, Targets, Techniques. School of Chemistry, Special Seminar University of Cardiff, UK, 2014.

F. Wuest. Molecular Imaging: Tracers, Targets, Techniques. Department of Oncology, Oxford University, UK, 2014.

F. Wuest. Radiolabeling of peptides: Prosthetic groups. SNMMI annual meeting, St. Louis, MO, 2014.

- F. Wuest. Molecular Imaging: Tracers, Targets, Techniques. Molecular Imaging Workshop, Research Centre Dresden-Rossendorf, Dresden, Germany, 2013.
- F. Wuest. Macromolecules and their labeling with fluorine-18. 20th International Symposium on Radiopharmaceutical Sciences, Jeju, Korea, 2013.
- F. Wuest. Targeting COX-2 for anticancer drug development, tumor radiosensitization and molecular imaging of cancer. MPC Lecture, Memorial Sloan-Kettering Cancer Center, New York, NY, 2013
- F. Wuest. Radiolabeling of peptides: Prosthetic groups. SNMMI annual meeting, Vancouver, BC, 2013.
- F. Wuest. 18F-labeled peptides: The future is bright. 7th International Symposium on Radiohalogens, Whistler, BC, 2012.
- F. Wuest. Efficiency & Fidelity: Application of click chemistry for molecular imaging. Click chemistry symposium, SNMMI annual meeting, Miami, FL, 2012.
- F. Wuest. Transition metals for the synthesis of 18F-labeled radiotracers. ASC meeting, San Diego, CA, 2012.
- F. Wuest. Labelling of macromolecules with fluorine-18 using prosthetic groups. 19th International Symposium on Radiopharmaceutical Sciences, Amsterdam, NL, 2011.
- F. Wuest. Fructose-PET: Molecular imaging of GLUT5 in breast cancer. Research Centre Dresden-Rossendorf, Germany, 2011
- F. Wuest. Targeting COX-2 for anticancer drug development, tumor radiosensitization and molecular imaging of cancer. 12th International Congress on Amino Acids, Peptides and Proteins in Beijing, China, 2011.
- F. Wuest. Application of transition metals for the synthesis of 18F-labeled radiotracers. 93rd Canadian Chemistry Conference. Toronto, ON, 2010.
- F. Wuest. Use of transition metals for the synthesis of 18F-labeled compounds. 6th International Symposium on Radiohalogens, Whistler, BC, 2008.
- F. Wuest. Carbon-11 Radiochemistry: Basic Principles and Recent Advances. GSK - Imperial College Symposium "Positron emission tomography (PET): Technology and application", London, UK, 2008.
- F. Wuest. Design and synthesis of radiotracers for imaging cyclooxygenase-2 expression. Seminars on Drug Discovery and Development, ETH Zurich, Department Chemie und Angewandte Biowissenschaften, Zurich, Switzerland, 2007.
- F. Wuest. Carbon-11 labelling chemistry. GSK - Imperial College Symposium "Positron emission tomography (PET): Technology and application", London, UK, 2007.
- F. Wuest. 18F-Markierungen mit kleinen Markierungsbausteinen. Department of Nuclear Medicine and Institute for Radiochemistry, Technical University of Munich, Germany, 2006.
- F. Wuest. Carbon-11 labelling chemistry. GSK - Imperial College Symposium "Positron emission tomography (PET): Technology and application", London, UK, 2006.
- F. Wuest. In vivo Stoffwechseluntersuchungen mit Hilfe der Positronen-Emissions-Tomographie (PET). Forschungsinstitut für die Biologie landwirtschaftlicher Nutztiere. Dummerstorf, Germany, 2006.
- F. Wuest. Fluorine-18 labelling of small molecules. Ernst Schering Research Foundation Workshop "PET Chemistry: The Driving Force in Molecular Imaging". Berlin, Germany, 2005.
- F. Wuest. PET Radiochemistry and the Potential of PET in Drug Development and Evaluation. Boehringer Ingelheim, Germany, 2004.
- F. Wuest. Transition metal-mediated C-C and C-N bond forming reactions with the short-lived positron emitters 11C and 18F. Washington University, School of Medicine St. Louis, MO, 2004.
- F. Wuest. Positron Emission Tomography (PET): Fundamentals and the Potential Role in Drug Research and Development. 14th ICCP Meeting, Bayer AG, Wuppertal, Germany, 2003.

Current Grant Support

Title:	Targeting Ubiquitin-Specific protease 14 for overcoming Drug resistance in Multiple Myeloma
Funding source:	Alberta Cancer Foundation (ACF)
Role:	Principal Investigator
Amount awarded:	\$75,000
Support period:	May 2022 – April 2024
Title:	Pyroptosis in the CNS: Molecular mechanisms & therapeutic targets in progressive MS
Funding source:	Canadian Institute of Health Research (CIHR)
Role:	Co-PI
Amount awarded:	\$ 1,032,750
Support period:	April 2022 – March 2027
Title:	Autotaxin inhibitors as a novel treatment to improve outcomes from chemotherapy and radiotherapy for cancer patients
Funding source:	Mitacs
Role:	Principal Investigator
Amount awarded:	\$90,000
Support period:	May 2021 – June 2023
Title:	Targeted delivery of novel inhibitors of DNA repair and combination treatments for the modulation of therapeutic response against metastatic colorectal cancer
Funding source:	Canadian Institute of Health Research (CIHR)
Role:	Co-Applicant
Amount awarded:	\$635,000
Support period:	September 2021 – August 2024
Title:	Alberta Neuroendocrine Radioisotope Program (ANRaP)
Funding source:	Alberta Cancer Foundation (ACF)
Role:	Co-Principal Investigator
Amount awarded:	\$250,000
Support period:	April 2020 – March 2023
Title:	An Immuno-PET-PDGFR α Conjugate to Identify Metastases and Predict Outcomes for Papillary Thyroid Cancer
Funding source:	Canadian Institute of Health Research (CIHR)
Role:	Co-Applicant
Amount awarded:	\$818,550
Support period:	April 2020 – March 2025
Title:	Targeting lysophosphatidate (LPA) signaling to improve therapeutic outcomes for breast cancer patients
Funding source:	Canadian Institute of Health Research (CIHR)
Role:	Co-Applicant
Amount awarded:	\$937,125
Support period:	April 2020 – March 2025
Title:	Development of Small Macrocyclic Antibody-Like Scaffolds (SMALS) for therapeutic inhibition of Nodal
Funding source:	Canadian Institute of Health Research (CIHR)
Role:	Co-Applicant
Amount awarded:	\$841,500
Support period:	April 2020 – March 2025

Title: Validation of radiolabeled microspheres
Funding source: Boston Scientific Inc.
Role: Principal Investigator
Amount awarded: \$ 457,500
Support period: June 2018 – December 2022

Title: Novel chemistry with fluorine-18
Funding source: Natural Sciences and Engineering Research Council of Canada (NSERC)
Role: Principal Investigator
Amount awarded: \$240,000
Support period: April 2019 - March 2024

Title: Molecular imaging of autotaxin: Targeting the crossroad of cancer and inflammation
Funding source: Canadian Institute of Health Research (CIHR)
Role: Principal Investigator
Amount awarded: \$707,000
Support period: September 2019 – August 2024.

Title: Radiolabeled PSMA Ligands for Precision Medicine of Prostate Cancer
Funding source: Alberta Cancer Foundation (ACF)
Role: Principal Investigator
Amount awarded: \$1,750,000
Support period: September 2018 - August 2023.

Past Grant Support

Title of grant: Kit-like preparation of 18F-labeled radiopharmaceuticals
Funding source: University Hospital Foundation
Role: Principal Investigator
Amount awarded: \$600,000
Support period: September 2017 – August 2020

Title of grant: Novel Radiolabeled PSMA Inhibitors for Clinical PET Imaging of PCa
Funding source: Kaye Foundation
Role: Principal Investigator
Amount awarded: \$177,380
Support period: September 2018 – August 2020

Title: Evaluating the use of 68Gallium DOTATATE positron emission tomography/computerized tomography (PET/CT) in patients with giant cell arteritis
Funding source: UHFMR
Role: Co-Applicant
Amount awarded: \$34,450
Support period: January 2019 – December 2019

Title: Radionuclide-based bioorthogonal click chemistry for targeted molecular imaging
Funding source: Natural Sciences and Engineering Research Council of Canada (NSERC)
Role: Principal Investigator
Amount awarded: \$170,000
Support period: April 2014 – March 2019.

Title of grant: Silicon-Fluorine-PSMA: A winning team for early prostate cancer detection
Funding source: Prostate Cancer Canada
Role: Principal Investigator
Amount awarded: \$200,000
Support period: July 2016 - June 2018

Title of grant:	Molecular Targeting of PDGFR-alpha in Papillary Thyroid Cancer
Funding source:	University Hospital Foundation (UHF) Medical Research
Role:	Principal Investigator
Amount awarded:	\$35,000
Support period:	January 2017 - December 2017
Title of grant:	Molecular imaging of COX-2
Funding source:	Alberta Innovates – Health Solutions (AIHS)
Role:	Principal Investigator
Amount awarded:	\$1,495,000
Support period:	July 2010 - June 2017
Title of grant:	Radionuclide-based bioorthogonal click chemistry for targeted molecular imaging
Funding source:	Natural Sciences and Engineering Research Council of Canada (NSERC)
Role:	Principal investigator
Amount awarded:	\$170,000
Support period:	April 2015 - March 2019
Title of grant:	Novel Therapeutic Strategies for Colorectal Cancer Based on Targeting DNA Repair
Funding source:	Alberta Cancer Foundation
Role:	Co-Applicant
Amount awarded:	\$2,935,338
Support period:	September 2015 - August 2018
Title of grant:	Biomarkers amplification, enrichment, an multiplex detection for prostate cancer personalized nanomedicine
Funding source:	Prostate Cancer Canada
Role:	Co-Applicant
Amount awarded:	\$200,000
Support period:	July 2015 - June 2017
Title of grant:	Blocking inflammatory signaling through autotaxin as a new paradigm for improving radiotherapy
Funding source:	Canadian Cancer Society
Role:	Co-Applicant
Amount awarded:	\$200,000
Support period:	July 2016 - June 2018
Title of grant:	Novel, Selective Molecular Probes Targets at Hexose Transporter Proteins
Funding source:	Canadian Glycomics Network (GlycoNet)
Role:	Co-Principal Investigator
Amount awarded:	\$100,000
Support period:	January 2017 - December 2017
Title of grant:	Development of PSMA-targeting radiotracers
Funding source:	Canadian Institute of Health Research (CIHR)
Role:	Principal Investigator
Amount awarded:	\$172,000
Support period:	January 2014 - December 2016
Title of grant:	In vivo chemistry for pretargeted molecular imaging and therapy of cancer
Funding source:	Alberta Cancer Foundation
Role:	Principal Investigator
Amount awarded:	\$320,000
Support period:	June 2011 - May 2014

Title of grant:	NSERC CREATE Training Program in Molecular Imaging Probes
Funding source:	Natural Sciences and Engineering Research Council of Canada (NSERC)
Role:	Co-Principal Investigator
Amount awarded:	\$1,650,000
Support period:	May 2010 - April 2016
Title of grant:	Development of efficient bioorthogonal click chemistry with 18F-labeled compounds
Funding source:	Natural Sciences and Engineering Research Council of Canada (NSERC)
Role:	Principal Investigator
Amount awarded:	\$300,000
Support period:	September 2009 - August 2014
Title of grant:	Molecular imaging of cyclooxygenase-2 (COX-2) expression in vivo by means of positron emission tomography (PET)
Funding source:	Canadian Institutes of Health Research (CIHR)
Role:	Principal investigator
Amount awarded:	\$321,076
Support period:	October 2009 - September 2014
Title of grant:	The development of a positron-emitting aptamer targeting apoptosis
Funding source:	Canadian Institutes of Health Research (CIHR)
Role:	Co-Applicant
Amount awarded:	\$279,704
Support period:	March 2010 - November 2013
Title of grant:	Multimodality Animal Imaging Stage
Funding source:	Alberta Cancer Foundation
Role:	Principal Investigator
Amount awarded:	\$9,500
Support period:	May 2010 - December 2012
Title of grant:	Small animal PET/CT: An innovative preclinical multimodality molecular imaging platform for translational research
Funding source:	Alberta Advanced Education and Technology
Role:	Principal Investigator
Amount awarded:	\$789,853
Support period:	January 2011 - December 2014
Title of grant:	Small animal PET/CT: An innovative preclinical multimodality molecular imaging platform for translational research
Funding source:	Canada Foundation for Innovation (CFI)
Role:	Principal Investigator
Amount awarded:	\$789,853
Support period:	January 2011 - December 2014
Title of grant:	Development of Molecular PET Probes.
Funding source:	Alberta Cancer Foundation
Role:	Principle investigator
Amount awarded:	\$150,000
Support period:	April 2012 - March 2014
Title of grant:	Development of new hexose analogues for use with Positron Emission Tomography (PET) to improve diagnosis and treatment of cancer
Funding source:	NSERC – Collaborative Health Research Program
Role:	Co-Applicant
Amount awarded:	\$525,300
Support period:	May 2009 - April 2012

Title of grant:	Evaluation of fluorinated hexose analogues for use with PET imaging of breast tumors
Funding source:	Canadian Breast Cancer Foundation (CBCF)
Role:	Co-Applicant
Amount awarded:	\$187,000
Support period:	April 2009 - April 2011
Title of grant:	Cyclotron-based production of technetium radioisotopes
Funding source:	Canadian Institutes of Health Research (CIHR)
Role:	Co-Applicant
Amount awarded:	\$1,304,395
Support period:	January 2010 - December 2011
Title of grant:	Mammaglobin promoter-controlled oncolytic virotherapy
Funding source:	Alberta Cancer Foundation
Role:	Co-Applicant
Amount awarded:	\$50,000
Support period:	May 2014 - April 2011
Title of grant:	Molecular imaging of cell cycle components
Funding source:	German Academic Exchange Service (DAAD, Germany)
Role:	Principal Investigator
Amount awarded:	\$16,000
Support period:	January 2009 - December 2011
Title of grant:	Fluorine-18 labeled corticosteroids as ligands for imaging brain glucocorticoid receptors
Funding source:	German Research Foundation (DFG) (Germany)
Role:	Principal Investigator
Amount awarded:	\$300.000
Support period:	January 2005 - December 2006
Title of grant:	Fluorine-18 labeled corticosteroids as ligands for imaging brain glucocorticoid receptors
Funding source:	German Research Foundation (DFG) (Germany)
Role:	Principal Investigator
Amount awarded:	\$126,000
Support period:	January 2002 - December 2004
Title of grant:	Production and application of Yttrium-86
Funding source:	Federal Ministry for Education and Research (Germany)
Role:	Principal Investigator
Amount awarded:	\$197,000
Support period:	January 2003 - December 2005

Current graduate students and postdoctoral fellows (PDFs)

Student/PDF	Degree	Year of degree	Type of supervision
Colton Gregory	MSc	2024	Supervisor
Pawani Perrera	PhD	2026	Supervisor
Karim Elbaz	PhD	2025	Supervisor
Bryce Nelson	PhD	2025	Supervisor
Felix Francis	PhD	2024	Supervisor
Richard Yuen	PhD	2023	Supervisor
Jenilee Way	PhD	2022	Supervisor
Nasim Sarraimi	PhD	2024	Co-Supervisor
Edris Ebrahimi	PDF	N/A	Supervisor
MiYao Hu	PDF	N/A	Supervisor
Miguel Herrera Rueda	PDF	N/A	Supervisor

Former graduate students and postdoctoral fellows (PDFs)

Student/PDF	Degree	Year of degree	Type of supervision
Maximilian Boateng	MSc	2021	Co-Supervisor
Marcus Litchfield	MSc	2020	Supervisor
Daniel Kryz	MSc	2019	Supervisor
Samantha Leier	MSc	2018	Supervisor
Alison Marshall	MSc	2015	Supervisor
Jenilee Way	MSc	2015	Supervisor
Amanda Perreault	MSc	2015	Supervisor
Susan Richter	MSc	2006	Supervisor
Lena Koehler	MSc	2006	Supervisor
Theres Ramenda	MSc	2006	Supervisor
Alexander Mueller	MSc	2005	Supervisor
Frida Svensson	MSc	2007	Supervisor
Aileen Hoehne	MSc	2005	Supervisor
Joern Schlesinger	MSc	2003	Supervisor
Christina Hultsch	MSc	2004	Supervisor
Anne Barth	MSc	2005	Supervisor
Simon Fergusson	PhD	2021	Co-Supervisor
Sai Kiran Sharma	PhD	2014	Supervisor
Ole Tietz	PhD	2015	Supervisor
Susan Richter	PhD	2011	Supervisor
Lena Koehler	PhD	2010	Supervisor
Theres Ramenda	PhD	2010	Supervisor
Bjoern Steiniger	PhD	2009	Supervisor
Joern Schlesinger	PhD	2008	Supervisor
Sven Gester	PhD	2007	Supervisor
Christina Hultsch	PhD	2007	Co-supervisor
Janice Kapty	PhD	2012	Co-supervisor
Narendar Gade	PDF	2022	Supervisor
Stephanie Mattingly	PDF	2019	Supervisor
David Perez Gomez	PDF	2019	Supervisor
Michael Wagner	PDF	2018	Supervisor
Susan Richter	PDF	2016	Supervisor
Ingrit Hamann	PDF	2016	Supervisor
James Knight	PDF	2013	Supervisor
Jatinder Kaur	PDF	2017	Supervisor
Atul Bhardwaj	PDF	2017	Supervisor
Baker S. Al Hourani	PDF	2012	Supervisor
Vincent Bouvet	PDF	2012	Supervisor
Constantin Mamat	PDF	2008	Supervisor
Marco Mueller	PDF	2006	Supervisor
Matthias Berndt	PDF	2007	Supervisor