

Publications 2009

Doctoral Thesis

Pinborg L. Molecular Imaging of receptors and transporters in humans using PET and SPECT: from models to methods and potentially to pitfalls. Defended June 4th 2009 at University of Copenhagen, Faculty of Health Sciences.

PhD Thesis

Bie-Olsen LG. Influence of hypoglycaemia and basal renin-angiotensin system activity on regional cerebral blood flow different cognitive loads, a H2150 PET study. Defended September 4th 2009 at University of Copenhagen, Faculty of Health Sciences.

Chakera A. Technical challenges and clinical implications of preoperative sentinel node identification in breast cancer and cutaneous melanoma. Defended May 19th 2009 at Rigshospitalet, University of Copenhagen, Faculty of Health Sciences.

Erritzoe D. *In vivo* serotonergic markers in overweight and schizophrenic human subjects. Defended April 17th 2009 at University of Copenhagen, Faculty of Health Sciences.

Kaltbitzer J. The serotonin transporter and behavior. Gene environment interactions. Defended November 16th 2009 at University of Copenhagen, Faculty of Health Sciences.

Kornum B. A pig model for studies of serotonergic mechanisms in memory disorders. Defended October 29th 2009 at University of Copenhagen, Faculty of Health Sciences.

Marnier L. Molecular brain imaging of the serotonin system: Reproducibility and evaluation of PET radiotracers. Defended March 13th 2009 at University of Copenhagen, Faculty of Health Sciences.

Skovgaard D. Positron Emission Tomography in the study of skeletal muscle and tendon: metabolic, cellular and matrix response to exercise. Defended December 3rd 2009 at University of Copenhagen, Faculty of Health Sciences.

Agger A, von Buchwald C, Madsen AR, Yde J, Lesnikova I, Christensen CB, Foghsgaard S, Christensen TB, Hansen HS, Larsen S, Bentzen J, Andersen E, Andersen L, Grau C. Squamous cell carcinoma of the nasal vestibule 1993-2002: a nationwide retrospective study from DAHANCA. *Head Neck* 2009; 31: 1593-9.

Alkureishi LW, Burak Z, Alvarez JA, Ballinger J, Bilde A, Britten AJ, Calabrese L, Chiesa C, Chiti A, de Bree R, Gray HW, Hunter K, Kovacs AF, Lassmann M, Leemans CR, Marmelle G, McGurk M, Mortensen J, Poli T, Shoab T, Tloan P, Sorensen, JA, Stoeckli SJ, Thomsen JB, Trifiro G, Werne J, Ross GL. Joint practice guidelines for radionuclide lymphoscintigraphy for sentinel node localization in oral/oropharyngeal squamous cell carcinoma. *Ann Surg Oncol* 2009; 16: 3190-210.

Andersson H, Cederkrantz E, Back T, Divgi C, Elgqvist J, Himmelman J, Horvath G, Jacobsson L, Jensen H, Lindegren S, Palm S, Hultborn R. Intraperitoneal alpha-particle radioimmunotherapy of ovarian cancer patients: pharmacokinetics and dosimetry of ²¹¹At-MX35 F(ab)²-a phase I study. *J Nucl Med* 2009; 50:1153-60.

Arveschoug AK, Hjorthaug K, Rehling M, Hojgaard L, Mortensen J, Oturai PS. Peptide receptor radionuclide therapy of neuroendocrine tumors. *Ugeskr Laeger* 2009; 171: 1073.

Back T, Haraldsson B, Hultborn R, Jensen H, Johansson ME, Lindegren S, Jacobsson L. Glomerular filtration rate after alpha-radioimmunotherapy with ²¹¹At-MX35-F(ab)²: a long-term study of renal function in nude mice. *Cancer Biother Radiopharm* 2009; 24: 649-58.

Berthelsen AK. Blodsygdomme. In: de Muckadell OBS, Haunso S, Vilstrup H, eds. Medicinsk Kompendium. 17. ed. Nyt Nordisk Forlag Arnold Busck; 2009: 1771-3.

Bie-Olsen LG, Pedersen-Bjergaard U, Kjaer TW, Lonsdale MN, Law I, Thorsteinsson B. Association between regional cerebral blood flow during hypoglycemia and genetic and phenotypic traits of the renin-angiotensin system. *J Cereb Blood Flow Metab* 2009; 29(11): 1790-5.

Bie-Olsen LG, Kjaer TW, Pedersen-Bjergaard U, Lonsdale MN, Holst JJ, Law I, Thorsteinsson B. Changes of cognition and regional cerebral activity during acute hypoglycemia in normal subjects: A H2 150 positron emission tomographic study. *J Neurosci Res* 2009; 87: 1922-8.

Bouchelouche K, Capala J, Oehr P. Positron emission tomography/computed tomography and radioimmunotherapy of prostate cancer. *Curr Opin Oncol* 2009; 21: 469-74.

Brauner EV, Mortensen J, Moller P, Bernard A, Vinzents P, Wahlin P, Glasius M, Loft S. Effects of ambient air particulate exposure on blood-gas barrier permeability and lung function. *Inhal Toxicol* 2009; 21: 38-47.

Burton CM, Iversen M, Carlsen J, Mortensen J, Andersen CB, Steinbruchel D, Scheike T. Acute cellular rejection is a risk factor for bronchiolitis obliterans syndrome independent of post-transplant baseline FEV1. *J Heart Lung Transplant* 2009; 28: 888-93.

Chakera AH, Hesse B, Burak Z, Ballinger JR, Britten A, Caraco C, Cochran AJ, Cook MG, Drzewiecki KT, Essner R, Even-Sapir E, Eggermont, AM, Stopar TG, Ingvar C, Mihm MC jr, McCarthy SW, Mozzillo N, Nieweg OE, Scolyer, RA, Starz H, Thompson JF, Trifiro G, Viale G, Vidal-Sicart S, Uren R, Waddington W, Chiti A, Spatz A, Testori A. EANM-EORTC general recommendations for sentinel node diagnostics in melanoma. *Eur J Nucl Med Mol Imaging* 2009; 36: 1713-42.

Chakera AH, Lock-Andersen J, Hesse U, Nurnberg BM, Juhl BR, Stokholm KH, Drzewiecki KT, Hesse B. One-day or two-day procedure for sentinel node biopsy in melanoma? *Eur J Nucl Med Mol Imaging* 2009; 36: 928-37.

de Nijs R, Miranda MJ, Hansen LK, Hanson LG. Motion correction of single-voxel spectroscopy by independent component analysis applied to spectra from nonanesthetized pediatric subjects. *Magn Reson Med* 2009; 62: 1147-54.

Denholt CL, Hansen PR, Pedersen N, Poulsen HS, Gillings N, Kjaer A. Identification of novel peptide ligands for the cancer-specific receptor mutation EGFRvIII using a mixture-based synthetic combinatorial library. *Biopolymers* 2009; 91: 201-6.

Elgqvist J, Andersson H, Haglund E, Jensen H, Kahu H, Lindegren S, Warnhammar E, Hultborn R. Intraperitoneal alpha-radioimmunotherapy in mice using different specific activities. *Cancer Biother Radiopharm* 2009; 24: 509-13.

Erritzoe D, Frokjaer VG, Haugbol S, Marnier L, Svarer C, Holst K, Baare WF, Rasmussen PM, Madsen J, Paulson OB, Knudsen GM. Brain serotonin 2A receptor binding: relations to body mass index, tobacco and alcohol use. *Neuroimage* 2009; 46: 23-30.

Ewertson C, Nielsen KR, Henriksen BM, Torp-Pedersen S, Nielsen MB. Image fusion with ultrasound. *Ugeskr Laeger* 2009; 171: 1069.

Fischer B, Lassen U, Mortensen J, Larsen S, Loft A, Bertelsen A, Ravn J, Clementsen P, Hogholm A, Larsen K, Rasmussen T, Keiding S, Dirksen A, Gerke O, Skov B, Steffensen I, Hansen H, Vilmann P, Jacobsen G, Backer V, Maltbaek N, Pedersen J, Madsen H, Nielsen H, Hojgaard L. Preoperative staging of lung cancer with combined PET-CT. *N Engl J Med* 2009; 361: 32-9.

Frisoni GB, Lorenzi M, Caroli A, Kempainen N, Nagren K, Rinne JO. In vivo mapping of amyloid toxicity in Alzheimer disease. *Neurology* 2009; 72(17): 1504-11.

Frokjaer VG, Erritzoe D, Madsen J, Paulson OB, Knudsen GM. Gender and the use of hormonal contraception in women are not associated with cerebral cortical 5-HT 2A receptor binding. *Neuroscience* 2009; 163: 640-5.

Frokjaer VG, Vinberg M, Erritzoe D, Svarer C, Baare W, Budtz-Joergensen E, Madsen K, Madsen J, Kessing LV, Knudsen GM. High familial risk for mood disorder is associated with low dorsolateral prefrontal cortex serotonin transporter binding. *Neuroimage* 2009; 46: 360-6.

Gaster RS, Hall DA, Nielsen CH, Osterfeld SJ, Yu H, Mach KE, Wilson RJ, Murmann B, Liao JC, Gambhir SS, Wang SX. Matrix-insensitive protein assays push the limits of biosensors in medicine. *Nat Med* 2009; 15: 1327-32.

Gerke O, Poulsen MH, Bouchelouche K, Hoiland-Carlsen PF, Vach W. PET/CT in cancer: moderate sample sizes may suffice to justify replacement of a regional gold standard. *Mol Imaging Biol* 2009; 11: 381-5.

Gillings N. A restricted access material for rapid analysis of ¹¹C-labeled radiopharmaceuticals and their metabolites in plasma. *Nucl Med Biol* 2009; 36: 961-5.

Graebe M, Pedersen SF, Borgwardt L, Hojgaard L, Sillesen H, Kjaer A. Molecular pathology in vulnerable carotid plaques: correlation with 18-fluorodeoxyglucose positron emission tomography (FDG-PET). *Eur J Vasc Endovasc Surg* 2009; 37: 714-21.

Gutte H, Mortensen J, Jensen CV, Johnbeck CB, von der Recke P, Petersen CL, Kjaergaard J, Kristoffersen US, Kjaer A. Detection of pulmonary embolism with combined ventilation-perfusion SPECT and low-dose CT: head-to-head comparison with multidetector CT angiography. *J Nucl Med* 2009; 50:1987-92.

Hag AM, Kristoffersen US, Pedersen SF, Gutte H, Lebesch AM, Kjaer A. Regional gene expression of LOX-1, VCAM-1, and ICAM-1 in aorta of HIV-1 transgenic rats. *PLoS One* 2009; 4: e8170.

Hansen CL, Kuhnast B, Hinnen F, Dolle F, Gillings N, Hansen PR, Kjaer A. Comparison of ¹⁸F-FBA and ¹⁸F-FPyMe as peptide radiolabeling agents of PEPHC1 for PET imaging of EGFRvIII. *Adv Exp Med Biol* 2009; 611: 405-6.

Hesse B, Gimsing P. Can amyloidosis scintigraphy be useful? *Ugeskr Laeger* 2009; 171: 1835.

Hojgaard L et al. ESF-EMRC Position on the Proposal for a Directive on the Protection of Animals used for Scientific Purposes. EMRC Publications. Positions Paper. 2nd Edition March 2009: 1-12.

Hojgaard L et al. Investigator-Driven Clinical Trials. EMRC Publications. Forward Look. March 2009:1-60.

Hoigaard L et al. A vital voice. Medical Science and Research. Public service review: European Union 2009; 18: 223-4.

Jakobsen AL, Jensen M. Picture of the month: bone scintigraphy. *Ugeskr Laeger* 2009; 171: 2205.

Jeppesen PB, Lund P, Gottschalck IB, Nielsen HB, Holst JJ, Mortensen J, Poulsen SS, Quistorff B, Mortensen, PB. Short bowel patients treated for two years with glucagon-like peptide 2 (GLP-2): compliance, safety, and effects on quality of life. *Gastroenterol Res Pract* 2009; 425759.

Jeppesen PB, Lund P, Gottschalck IB, Nielsen HB, Holst JJ, Mortensen J, Poulsen SS, Quistorff B, Mortensen PB. Short bowel patients treated for two years with glucagon-like Peptide 2: effects on intestinal morphology and absorption, renal function, bone and body composition, and muscle function. *Gastroenterol Res Pract* 2009; 616054.

Kalbitzer J, Svarer C, Frokjaer VG, Erritzoe D, Baare WF, Madsen J, Hasselbalch SG, Knudsen GM. A probabilistic approach to delineating functional brain regions. *J Nucl Med Technol* 2009; 37: 91-5.

Kalbitzer J, Frokjaer VG, Erritzoe D, Svarer C, Cumming P, Nielsen FA, Hashemi SH, Baare WF, Madsen J, Hasselbalch SG, Kringelbach ML, Mortensen EL, Knudsen GM. The personality trait openness is related to cerebral 5-HTT levels. *Neuroimage* 2009; 45: 280-5.

Kapucu OL, Nobili F, Varrone A, Booi J, Vander Borgh T, Nagren K, Darcourt J, Tatsch K, Van Laere KJ. EANM procedure guideline for brain perfusion SPECT using (99m)Tc-labelled radiopharmaceuticals, version 2. *Eur J Nucl Med Mol Imag* 2009; 36: 2093-2102.

Kjaer A, Kristoffersen US, Tarnow L, Parving HH, Hesse B. Short-term oral treatment with the angiotensin II receptor antagonist losartan does not improve coronary vasomotor function in asymptomatic type 2 diabetes patients. *Diabetes Res Clin Pract* 2009; 84: 34-8.

Kornum BR, Lind NM, Gillings N, Marner L, Andersen F, Knudsen GM. Evaluation of the novel 5-HT4 receptor PET ligand ¹¹C-SB207145 in the Gottingen minipig. *J Cereb Blood Flow Metab* 2009; 29: 186-96.

Krakauer M, Law I. FDG PET brain imaging in neuropsychiatric systemic lupus erythematosus with choreic symptoms. *Clin Nucl Med* 2009; 34: 122-3.

Kristensen CA, Nottrup TJ, Berthelsen AK, Kjaer-Kristoffersen F, Ravn J, Sorensen JB, Engelholm SA. Pulmonary toxicity following IMRT after extrapleural pneumonectomy for malignant pleural mesothelioma. *Radiother Oncol* 2009; 92: 96-9.

Kristoffersen US, Straalman K, Schmidt G, Klyver H, Mortensen J, Andersen PA, Chakera AH, Kjaer A. Radiation exposure to surgical staff during hyperthermic isolated limb perfusion with 99m Technetium labeled red blood cells. *Int J Hyperthermia* 2009; 25: 86-9.

Kristoffersen US, Kofoed K, Kronborg G, Benfield T, Kjaer A, Lebech AM. Changes in biomarkers of cardiovascular risk after a switch to abacavir in HIV-1-infected individuals receiving combination antiretroviral therapy. *HIV Med* 2009; 10: 627-33.

Kristoffersen US, Kofoed K, Kronborg G, Giger AK, Kjaer A, Lebech AM. Reduction in circulating markers of endothelial dysfunction in HIV-infected patients during antiretroviral therapy. *HIV Med* 2009; 10: 79-87.

Kupers R, Danielsen ER, Kehlet H, Christensen R, Thomsen C. Painful tonic heat stimulation induces GABA accumulation in the prefrontal cortex in man. *Pain* 2009; 142: 89-93.

Kupers R, Schneider FC, Christensen R, Naert A, Husted H, Paulson OB, Kehlet H. No evidence for generalized increased postoperative responsiveness to pain: a combined behavioral and serial functional magnetic resonance imaging study. *Anesth Analg* 2009; 109: 600-6.

Kupers R, Frokjaer VG, Naert A, Christensen R, Budtz-Joergensen E, Kehlet H, Knudsen GM. A PET ¹⁸F-altanserine study of 5-HT2A receptor binding in the human brain and responses to painful heat stimulation. *Neuroimage* 2009; 44: 1001-7.

Lehel S, Madsen J, Gillings N. HPLC methods for the purification of ¹¹C-labelled radiopharmaceuticals: reversal of the retention of products and precursors. *J Label Compd Radiopharm* 2009; 52: 177-81.

Loft A. PET og PET/CT. In: de Muckadell OBS, Haunso S, Vilstrup H, eds. Medicinsk Kompendium. 17. ed. Nyt Nordisk Forlag Arnold Busck; 2009: 1773-4.

Marner L, Gillings N, Comley RA, Baare WF, Rabiner EA, Wilson AA, Houle S, Hasselbalch SG, Svarer C, Gunn RN, Laruelle M, Knudsen GM. Kinetic modeling of ¹¹C-SB207145 binding to 5-HT4 receptors in the human brain in vivo. *J Nucl Med* 2009; 50: 900-8.

Marner L, Knudsen GM, Haugbol S, Holm S, Baare W, Hasselbalch SG. Longitudinal assessment of cerebral 5-HT2A receptors in healthy elderly volunteers: an ¹⁸F-altanserine PET study. *Eur J Nucl Med Mol Imaging* 2009; 36: 287-93.

Mortensen J. Billeddiagnostik af lunger. In: de Muckadell OBS, Haunso S, Vilstrup H, eds. Medicinsk Kompendium. 17. ed. Nyt Nordisk Forlag Arnold Busck; 2009: 1326-30.

Mortensen J. Lungefunktionsundersøgelse. In: de Muckadell OBS, Haunso S, Vilstrup H, eds. Medicinsk Kompendium. 17. ed. Nyt Nordisk Forlag Arnold Busck; 2009: 1318-26.

Olesen OV, Sibomana M, Keller SH, Andersen F, Jensen J, Holm S, Svarer C, Hoigaard L. Spatial Resolution of the HRRT PET Scanner using 3D-OSEM PSF Reconstruction. *IEEE Nuclear Science Symposium Conference Record*, 2009.

Oxboel J, Binderup T, Knigge U, Kjaer A. Quantitative gene-expression of the tumor angiogenesis markers vascular endothelial growth factor, integrin alphaV and integrin beta3 in human neuroendocrine tumors. *Oncol Rep* 2009; 21: 769-75.

Pedersen JH, Ashraf H, Dirksen A, Bach K, Hansen H, Toennesen P, Thorsen H, Brodersen J, Skov BG, Dossing M, Mortensen J, Richter K, Clementsen P, Seersholm N. The Danish randomized lung cancer CT screening trial-overall design and results of the prevalence round. *J Thorac Oncol* 2009; 4: 608-14.

Ptito M, Matteau I, Gjedde A, Kupers R. Recruitment of the middle temporal area by tactile motion in congenital blindness. *Neuroreport* 2009; 20: 543-7.

Risum S, Hogdall C, Markova E, Berthelsen AK, Loft A, Jensen F, Hogdall E, Roed H, Engelholm SA. Influence of 2-18F-fluoro-2-deoxy-D-glucose positron emission tomography/computed tomography on recurrent ovarian

cancer diagnosis and on selection of patients for secondary cytoreductive surgery. *Int J Gynecol Cancer* 2009; 19: 600-4.

Rue NK, Klyver H, Hougaard CA, Nedergaard L, Hesse B, Bachmann NM. Sentinel node detection in melanomas using contrast-enhanced ultrasound. *Acta Radiol* 2009; 50: 412-7.

Sardanelli F, Fausto A, Di Leo G, de Nijs R, Vorbuchner M, Podo F. In vivo proton MR spectroscopy of the breast using the total choline peak integral as a marker of malignancy. *Am J Roentgenol* 2009; 192: 1608-17.

Scheinin NM, Aalto S, Koikkalainen J, Lotjonen J, Karra-sch M, Kempainen N, Vitanen M, Nagren K, Helin S, Scheinin M, Rinne JO. Follow-up of ¹¹C-PIB uptake and brain volume in patients with Alzheimer disease and controls. *Neurology* 2009; 73: 1186-92.

Sibomana M, Keller SH, Svarer C, Olesen OV, Andersen F, Holm S, Hoigaard L. New Attenuation Correction for the HRRT using transmission scatter correction and Total Variation Regularization. *IEEE Nuclear Science Symposium Conference Record*, 2009.

Sibomana M, Keller SH, Holm S, Bloomfield PM, Blinder S, Hansen SB, Michel C. Component-based Normalisation for the HRRT PET Sinogram-Mode Reconstruction. *IEEE Nuclear Science Symposium Conference Record*, 2009.

Skovgaard D, Kjaer M, El-Ali H, Kjaer A. ¹⁸F-fluorodeoxyglucose and PET/CT for noninvasive study of exercise-induced glucose uptake in rat skeletal muscle and tendon. *Eur J Nucl Med Mol Imag* 2009; 36: 859-68.

Skovgaard D, Kjaer M, Madsen J, Kjaer A. Noninvasive ⁶⁴Cu-ATSM and PET/CT assessment of hypoxia in rat skeletal muscles and tendons during muscle contractions. *J Nucl Med* 2009; 50: 950-8.

Syvanen S, Lindhe O, Palner M, Kornum BR, Rahman O, Langstrom B, Knudsen GM, Hammarlund-Udenaes M. Species differences in blood-brain barrier transport of three positron emission tomography radioligands with emphasis on P-glycoprotein transport. *Drug Metab Dispos* 2009; 37: 635-43.

Van Calenberg F, Gybels J, Van Laere K, Dupont P, Plaghki L, Depreitere B, Kupers R. Long term clinical outcome of peripheral nerve stimulation in patients with chronic peripheral neuropathic pain. *Surg Neurol* 2009; 72: 330-5.

Varrone A, Asenbaum S, Vander Borgh T, Booi J, Nobili F, Nagren K, Darcourt J, Kapucu OL, Tatsch K, Bartenstein P, Van Laere K. EANM procedure guidelines for PET brain imaging using ¹⁸F-FDG, version 2. *Eur J Nucl Med Mol Imaging* 2009; 36: 2103-10.

As in previous annual reports we have chosen to list scientific papers, and not the many abstracts and proceedings from the department.