

Helge Thisgaard
Klinisk Fysiologi og Nuklearmedicin
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Kvalifikationer

2017 Accreditation as Medical Physics Expert in Nuclear Medicine.
2012 Accreditation as Medical Physicist in Nuclear Medicine after 3-years post-graduate coursework/training program in nuclear medicine.
2008 Ph.D. in Medical Physics, Faculty of Life Sciences, University of Copenhagen.
2004 M.Sc. in Biophysics, Niels Bohr Institute, University of Copenhagen.

Publikationer

[⁵⁸mCo]Co-DOTA-hEGF: A novel ligand for targeted Auger electron therapy of glioblastoma using convection-enhanced delivery

Laursen, V., Baun, C., Aaberg Poulsen, C., Olsen, B. B., Dam, J. H., Jensen, A. & Thisgaard, H., maj 2019, I : Journal of Labelled Compounds and Radiopharmaceuticals. 62, S1, s. S511-S512

[Co-55]Co-DOTATATE improves PET imaging contrast of somatostatin receptor expressing tumours: Comparison with [Cu-64] Cu-DOTATATE and [Ga-68]Ga-DOTATATE

Thisgaard, H., Andersen, T. L., Baun, C., Dam, J. H. & Olsen, B. B., maj 2019, I : Journal of Labelled Compounds and Radiopharmaceuticals. 62, S1, s. S454-S455

Chelation, formulation, encapsulation, retention, and in vivo biodistribution of hydrophobic nanoparticles labelled with ⁵⁷Co-porphyrin: Oleylamine ensures stable chelation of cobalt in nanoparticles that accumulate in tumors

Hervella, P., Dam, J. H., Thisgaard, H., Baun, C., Olsen, B. B., Høilund-Carlsen, P. F. & Needham, D., 10. dec. 2018, I : Journal of Controlled Release. 291, s. 11-25

Effects of insulin and blood glucose on FDG-uptake in a mouse lung tumour model

Baun, C., Nielsen, A. L., Gerke, O., Falch Braas, K., Olsen, B. B., Thisgaard, H. & Høilund-Carlsen, P. F., okt. 2018, I : European Journal of Nuclear Medicine and Molecular Imaging. 45, Suppl 1, s. S563 1 s., EP-0662.

Selection of optimal macrocyclic chelator for high contrast PET imaging of gastrin releasing peptide receptor using cobalt-labeled bombesin antagonist RM26

Mitran, B., Thisgaard, H., Rinne, S. S., Rosenström, U., Azamy, F., Dam, J. H., Tolmachev, V. & Orlova, A., okt. 2018, I : European Journal of Nuclear Medicine and Molecular Imaging. 45, Suppl. 1, s. S672-S673 EP-0913.

[⁵⁵Co]Co-DOTA-PSMA-617 for PET/CT Imaging of Prostate Cancer in Xenograft Mice

Dam, J. H., Olsen, B. B., Baun, C. & Thisgaard, H., 2017.

[⁵⁵Co]Co-DOTA-PSMA-617 for PET/CT Imaging of Prostate Cancer in Xenograft Mice

Dam, J. H., Olsen, B. B., Baun, C. & Thisgaard, H., 2017, I : Journal of Labelled Compounds and Radiopharmaceuticals. 60, Suppl. 1, s. S640 1 s., P 458 .

[⁵⁸mCo]Co-DOTA-PSMA-617: A novel radioligand for Auger electron therapy of prostate cancer

Thisgaard, H., Olsen, B. B., Baun, C. & Dam, J. H., 2017, I : Journal of Labelled Compounds and Radiopharmaceuticals. 60, Suppl. 1, s. S327 1 s., P 167.

A PSMA Ligand Labeled with Cobalt-55 for PET Imaging of Prostate Cancer

Dam, J. H., Olsen, B. B., Baun, C., Høilund-Carlsen, P. F. & Thisgaard, H., 2017, I : Molecular Imaging and Biology. 19, 6 , s. 915-922

Evaluation of somatostatin and nucleolin receptors for therapeutic delivery in non-small cell lung cancer stem cells applying the somatostatin-analog DOTATATE and the nucleolin-targeting aptamer AS1411

Holmboe, S., Hansen, P. L., Thisgaard, H., Block, I., Müller, C., Langkjær, N., Høilund-Carlsen, P. F., Olsen, B. B. & Mollenhauer, J., 2017, I : PLOS ONE. 12, 5, 12 s., e0178286.

Formulation and in vivo biodistribution of ⁵⁷Co-porphyrin-labelled hydrophobic liquid nanoparticles

Hervella, P., Dam, J. H., Thisgaard, H., Baun, C., Olsen, B. B., Høilund-Carlsen, P. F. & Needham, D., 2017, I : European Journal of Nuclear Medicine and Molecular Imaging. 44, Suppl. 2, s. 307-308 OP-533.

High contrast pet imaging of GRPR expression in prostate cancer using cobalt-labeled bombesin antagonist RM26

Mitran, B., Thisgaard, H., Rosenström, U., Dam, J. H., Larhed, M., Tolmachev, V. & Orlova, A., 2017, I : Contrast Media & Molecular Imaging (Print). 2017, 10 s., 6873684.

The use of radiocobalt as a label improves imaging of EGFR using DOTA-conjugated Affibody molecule

Garousi, J., Andersson, K. G., Dam, J. H., Olsen, B. B., Mitran, B., Orlova, A., Buijs, J., Ståhl, S., Löfblom, J., Thisgaard, H. & Tolmachev, V., 2017, I : Scientific Reports. 7, 10 s., 5961.

Radiation-resistant cancer stem cells are sensitive to Auger-electron emission

Olsen, B. B., Høilund-Carlsen, P. F. & Thisgaard, H., 16. okt. 2016.

Evaluation of nucleolin and somatostatin receptor targeting for therapeutic delivery to lung cancer stem cells

Hansen, P. L., Holmboe, S., Olsen, B. B., Thisgaard, H., Christiansen, H., Schmidt, S., Block, I., Müller, C., Langkjær, N., Jørgensen, P. T., Vogel, S., Wengel, J., Høilund-Carlsen, P. F. & Mollenhauer, J., 27. jun. 2016.

Highly Effective Auger-Electron Therapy in an Orthotopic Glioblastoma Xenograft Model using Convection-Enhanced Delivery

Thisgaard, H., Halle, B., Aaberg-Jessen, C., Olsen, B. B., Nautrup Therkelsen, A. S., Dam, J. H., Langkjær, N., Munthe, S., Någren, K., Høilund-Carlsen, P. F. & Kristensen, B. W., 2016, I : Theranostics. 6, 12, s. 2278-2291

In Vivo Evaluation of a Bombesin Analogue Labeled with Ga-68 and Co-55/57

Dam, J. H., Olsen, B. B., Baun, C., Høilund-Carlsen, P. F. & Thisgaard, H., 2016, I : Molecular Imaging and Biology. 18, 3, s. 368-376

Radiation-resistant cancer stem cells are sensitive to Auger-electron emission

Olsen, B. B., Høilund-Carlsen, P. F. & Thisgaard, H., 2016, I : European Journal of Nuclear Medicine and Molecular Imaging. 43, suppl. 1, s. S480 1 s., EP674.

Auger electron therapy for glioblastoma

Thisgaard, H., Halle, B., Høilund-Carlsen, P. F., Kristensen, B. W. & Aaberg-Jessen, C., 23. dec. 2015, Patentnr. WO2015EP63823, 19. jun. 2015, Prioritetsdato 20. jun. 2014, Prioritetsnr. EP20140173218

Relationship between somatostatin receptor expression, DNA damage and cell survival in cancer cells incubated with a cobalt-labeled octreotide analogue

Olsen, B. B., Dam, J. H., Müller, C., Mollenhauer, J., Høilund-Carlsen, P. F. & Thisgaard, H., 29. maj 2015.

PET imaging with the non-pure positron emitters: ⁵⁵Co, ⁸⁶Y and ¹²⁴I

Braad, P-E., Hansen, S. B., Thisgaard, H. & Høilund-Carlsen, P. F., 9. apr. 2015, I : Physics in Medicine and Biology. 60, 9, s. 3479-3497 19 s.

Seeing the unseen-bioturbation in 4D: Tracing bioirrigation in marine sediment using positron emission tomography and computed tomography

Delefosse, M., Kristensen, E., Crunelle, D., Braad, P. E., Dam, J. H., Thisgaard, H., Thomassen, A. & Høilund-Carlsen, P. F., 4. apr. 2015, I : PLOS ONE. 10, 4, s. 1-17

Estimation of Tumor Volumes by ¹¹C-MeAIB and ¹⁸F-FDG PET in an Orthotopic Glioblastoma Rat Model

Halle, B., Thisgaard, H., Hvidsten, S., Dam, J. H., Thykjær, A. S., Høilund-Carlsen, P. F., Schulz, M. K., Andersen, C. & Kristensen, B. W., 2015, I : Journal of Nuclear Medicine. 56, 10, s. 1562-1568

Estimation of tumour volumes by [11C]MeAIB and [18F]FDG PET in an orthotopic glioblastoma model

Aaberg-Jessen, C., Halle, B., Thisgaard, H., Hvidsten, S., Dam, J. H., Thykjær, A. S., Høilund-Carlsen, P. F., Schulz, M. K., Andersen, C. & Kristensen, B. W., 2015, I : European Journal of Nuclear Medicine and Molecular Imaging. 42, 1 Supplement, s. 423-425 1 s., P173.

Estimation of tumour volumes by [11C]MeAIB and [18F]FDG PET in an orthotopic glioblastoma model

Aaberg-Jessen, C., Halle, B., Thisgaard, H., Hvidsten, S., Dam, J. H., Thykjær, A. S., Høilund-Carlsen, P. F., Schulz, M. K., Andersen, C. & Kristensen, B. W., 2015.

Novel treatment strategy for glioblastomas using Auger-electron therapy and concomitant chemotherapy: in vitro studies

Therkelsen, A., Olsen, B. B., Halle, B., Høilund-Carlsen, P. F. & Thisgaard, H., 2015, I : European Journal of Nuclear Medicine and Molecular Imaging. 42, 1 Supplement, s. 113 1 s., OP275.

The use of radiocobalt as a label improves PET imaging of EGFR using DOTA-conjugated affibody molecules

Garousi, J., Anderson, K., Dam, J. H., Olsen, B. B., Orlova, A., Buijs, J., Ståhl, S., Thisgaard, H. & Tolmachev, V., 2015, I : European Journal of Nuclear Medicine and Molecular Imaging. 42, 1 Supplement, s. 244 1 s., OP582.

In Vivo Evaluation of a Bombesin Analogue Labelled with 68Ga and 55/57Co

Dam, J. H., Olsen, B. B., Baun, C., Høilund-Carlsen, P. F. & Thisgaard, H., 18. okt. 2014, I : European Journal of Nuclear Medicine and Molecular Imaging. 41, 2. Supplement, s. S251 1 s., OP414.

Evaluation of Cobalt-Labeled Octreotide Analogs for Molecular Imaging and Auger Electron-Based Radionuclide Therapy

Thisgaard, H., Olsen, B. B., Dam, J. H., Bollen, P., Mollenhauer, J. & Høilund-Carlsen, P. F., 29. maj 2014, I : Journal of Nuclear Medicine. 55, 8, s. 1311-1316

Convection-enhanced delivery of the Auger-electron-emitter I-125-UdR: A highly efficient therapy in an Orthotopic Glioblastoma Xenograft Model

Halle, B., Thisgaard, H., Aaberg-Jessen, C., Olsen, B. B., Dam, J. H., Langkjaer, N., Munthe, S., Någren, K., Høilund-Carlsen, P. F. & Kristensen, B. W., 2014, I : Neuro-Oncology. 16, s. 1

Fully Automated Radiosynthesis and Formulation of [¹¹C]MeAIB Applied for *In Vivo* Imaging of Glioblastoma

Dam, J. H., Halle, B., Thisgaard, H., Hvidsten, S., Kristensen, B. W. & Någren, K., 17. maj 2013.

Biological evaluation of cobalt-labeled octreotide analogues; Novel compounds for PET imaging and Auger-electron-based radionuclide therapy

Thisgaard, H., Olsen, B. B., Dam, J. H. & Høilund-Carlsen, P. F., maj 2013, I : Journal of Labelled Compounds and Radiopharmaceuticals. 56, S1, s. S448 1 s.

Fully Automated Radiosynthesis and Formulation of [¹¹C]MeAIB Applied for *In Vivo* Imaging of Glioblastoma

Dam, J. H., Halle, B., Thisgaard, H., Hvidsten, S., Kristensen, B. W. & Någren, K., 2013, I : Journal of Labelled Compounds and Radiopharmaceuticals. 56, S1, s. S112 1 s.

Novel radioisotope-based nanomedical approaches

Olsen, B. B., Thisgaard, H., Vogel, S., Thomassen, M., Kruse, T. A., Needham, D., Mollenhauer, J. & Høilund-Carlsen, P. F., 2013, I : European Journal of Nanomedicine. 5, 4, s. 181-193

Set-up of Mouse Models for Nanodrug Testing

Hansen, P. L., Riedel, A., Schmidt, S., Terp, M. G., Trojnar, J. H., Schifter, S., Olsen, B. B., Thisgaard, H., Ditzel, H., Høilund-Carlsen, P. F. & Mollenhauer, J., 2013.

Quantitative 124I-PET: Evaluation of Prompt Gamma Coincidence Correction on a Clinical PET/CT system

Braad, P-E., Hansen, S. B., Thisgaard, H. & Høilund-Carlsen, P. F., 27. okt. 2012.

Experimental verification of Auger emitter radiotoxicity using exotic radionuclides

Jensen, M., Koester, U. & Thisgaard, H., 2012, I : Radiotherapy & Oncology. 102, Suppl. 1, s. 178-179

SPECT imaging with the therapeutic Auger electron emitter Er-165

Thisgaard, H., Hvidsten, S. & Bollen, P., sep. 2011.

A new and simple calibration-independent method for measuring the beam energy of a cyclotron

Gagnon, K., Jensen, M., Thisgaard, H., Publicover, J., Lapi, S., McQuarrie, S. & Ruth, T. J., jan. 2011, I : Applied Radiation and Isotopes. 69, 1, s. 247–253

Medium to large scale radioisotope production for targeted radiotherapy using a small PET cyclotron

Thisgaard, H., Jensen, M. & Elema, D. R., 2011, I : Applied radiation and isotopes : including data, instrumentation and methods for use in agriculture, industry and medicine. 69, 1, s. 1-7

Production and dosimetric aspects of the potent Auger emitter ^{58}mCo for targeted radionuclide therapy of small tumors

Thisgaard, H., Elema, DR. & Jensen, M., 2011, I : Medical Physics. 38, 8, s. 4535-4541 7 s.

Radiosynthesis of ^{55}Co - and ^{58}mCo -labelled DOTATOC for positron emission tomography imaging and targeted radionuclide therapy

Thisgaard, H., Olesen, M. L. & Dam, J. H., 2011, I : Journal of Labelled Compounds and Radiopharmaceuticals. 54, 12, s. 758-762 5 s.

Production and dosimetric aspects of the potent Auger emitter ^{58}mCo for targeted radionuclide therapy of small tumours

Thisgaard, H., Jensen, M. & Elema, D. R., 2010, I : European Journal of Nuclear Medicine and Molecular Imaging. 37, Suppl 2, s. S356-S357

Production of therapeutic quantities of ^{64}Cu and ^{119}Sb for radionuclide therapy using a small PET cyclotron

Thisgaard, H., Jensen, M. & Elema, D. R., 2010. 2 s.

Production of the Auger emitter ^{119}Sb for targeted radionuclide therapy using a small PET-cyclotron

Thisgaard, H. & Jensen, M., 1. jan. 2009, I : Applied radiation and isotopes : including data, instrumentation and methods for use in agriculture, industry and medicine. 67, 1, s. 34-8 5 s.

Accelerator based Production of Auger-electron-emitting Isotopes for Radionuclide Therapy

Thisgaard, H., 27. aug. 2008, Risø National Laboratory. 127 s.

^{119}Sb — A potent Auger emitter for targeted radionuclide therapy

Thisgaard, H. & Jensen, M., 7. aug. 2008, I : Medical Physics. 35, 9, s. 3839-3846

Auger Electron Therapy

Hinrichsen R, Thisgaard, H., Jensen M, Lyngkjær MF & Martiny L, 2007.

The $^{108}\text{Cd}(\alpha,2n)^{110}\text{Sn}$ nuclear reaction – A production route to the PET-radionuclide ^{110}mIn

Thisgaard, H., Jensen M & Jensen H.J, 2004.

High-spin states, lifetime measurements and isomers in Os-181

Cullen, DM., Pattison, LK., Smith, JF., Fletcher, AM., Walker, PM., El-Masri, HM., Podolyak, Z., Wood, RJ., Scholey, C., Wheldon, C., Mukherjee, G., Balabanski, D., Djongolov, M., Dalsgaard, T., Thisgaard, H., Sletten, G., Kondev, F., Jenkins, D., Dracoulis, GD., Lane, GJ. & 3 flere, Lee, IY., Macchiavelli, AO. & Xu, F., 15. dec. 2003, I : Nuclear Physics A: Nuclear and Hadronic Physics. 728, 3-4, s. 287-338

Multiphonon vibrations at high angular momentum in 182Os

Pattison, L. K., Cullen, D. M., Smith, J. F., Fletcher, A. M., Walker, P. M., El-Masri, H. M., Podolyák, Z., Wood, R. J., Scholey, C., Wheldon, C., Mukherjee, G., Balabanski, D., Djongolov, M., Dalsgaard, T., Thisgaard, H., Sletten, G., Kondev, F., Jenkins, D., Lane, G. J., Lee, I-Y. & 3 flere, Macchiavelli, A. O., Frauendorf, S. & Almeded, D., 31. okt. 2003, I : Physical Review Letters. 91, 18, s. 182501

Undervisningsportfolio

1. Formel pædagogisk uddannelse

Pædagogisk uddannelse:

2012-13 Universitetspædagogikum, Syddansk Universitet.

2013 "Student response systems", Syddansk Universitet, 0,5 ECTS.

2013 "Involverende metoder, der skaber resultater - Kursus 4: Idegenerering", Syddansk Universitet, 0,5 ECTS.

2012 "Aktiver dine studerende med diskussionsfora, blogs og wikier", Syddansk Universitet, 0,5 ECTS.

2012 "Vejledning – roller og relationer", Syddansk Universitet, 0,75 ECTS.

2007 "Mundtlig kommunikation", Roskilde Universitetscenter, 2 hele dage.

2. Uddannelsesadministrative opgaver

2015- Kursusansvarlig "Small Animal Molecular Imaging", Ph.d.-kursus, Syddansk Universitet, i samarbejde med lektor Peter Bollen (kursus under udarbejdelse).

2011-12 Modultovholder for "Strålebiologi og strålebeskyttelse", Syddansk Universitet.

3. Erfaring med undervisning, vejledning og eksamen

Kursusundervisning:

2015- "Small Animal Molecular Imaging", Ph.d.-kursus, Syddansk Universitet, i samarbejde med lektor Peter Bollen (kursus under udarbejdelse).

2012- "Bioinorganic Chemistry (KE810)", Syddansk Universitet. Gæsteforelæser, 2 lektioner pr. semester, i samarbejde med kollega.

2012 "Laboratory Animal Science", Syddansk Universitet. Forelæsninger, plenumdiskussioner, praktiske øvelser (6 lektioner). 5 ECTS, i samarbejde med kolleger.

2011-12 "Strålebiologi og strålebeskyttelse", Syddansk Universitet. Modulansvar, forelæsninger, gruppearbejde, plenumdiskussioner, praktiske øvelser, eksamination. 5 ECTS, i samarbejde med gæsteforelæsere.

2003-04 "Radioisotope Methodology and Health Physics", Det Biovidenskabelige Fakultet, Københavns Universitet. Laboratorie- og regneøvelser, 16 eftermiddage af 3-4 timer, inkl. udformning af undervisningsmateriale, i samarbejde med kollega.

Intern undervisning:

2009- Intern undervisning af læger og bioanalytikere i form af foredrag på Nuklearmedicinsk Afd, Odense Universitetshospital.

2012 Undervisning i strålebeskyttelse af personalet på Biomedicinsk Laboratorium.
2008 Intern undervisning af fysikere og radiografer i form af foredrag på Onkologisk Afd., Odense Universitetshospital.
2005-2008 Intern undervisning af bioanalytikere om strålehygiejne, undervisning af gymnasieelever, etc. ved Hevesy Laboratoriet, Risø DTU.

Anvendte evaluerings/eksamensformer:

2012 Eksamen via e-learn med korte åbne spørgsmål (den praktiske opsætning af denne eksamen blev dog udført af den kursusansvarlige for dette kursus).
2011-12 Skriftlig hjemmeopgave med bundet emne, bedømt ved 7-trins skalaen.
2003-04 Godkendelse af rapporter for obligatoriske laboratorieøvelser.

Vejledning:

2015- Hovedvejleder for prægraduat/speciale-studerende Tage Worm Nielsen, Det Sundhedsvidenskabelig Fakultet, Syddansk Universitet.
2014- Hovedvejleder for prægraduat/speciale-studerende Anne Sofie Nautrup Therkelsen, Det Sundhedsvidenskabelig Fakultet, Syddansk Universitet.
2011- Medvejleder for ph.d.-studerende Poul-Erik Braad, Det Sundhedsvidenskabelig Fakultet, Syddansk Universitet.
2013-14 Medvejleder for bachelorstuderende Jalinder Kauer, Det Naturvidenskabelige Fakultet, Syddansk Universitet.
2012-13 Medvejleder for specialestuderende Charlotte Sommer, Det Naturvidenskabelige Fakultet, Syddansk Universitet.
2012 Hovedvejleder for masterstuderende Camilla Brandt, Det Sundhedsvidenskabelig Fakultet, Syddansk Universitet.

4. Metoder, materialer og redskaber

Udarbejdet undervisningsmateriale:

- Laboratorieøvelsesvejledninger til otte øvelser for kurset Radioisotope Methodology and Health Physics.
- Undervisningsslides i Powerpoint til kurset Strålebiologi og strålebeskyttelse.
- Undervisningsslides i Powerpoint til kurset Laboratory Animal Science.
- Øvelsesvejledning til praktiske "hands on" scanningsøvelser på kurset Laboratory Animal Science.
- Undervisningsslides i Powerpoint til kurset Bioinorganic Chemistry.
- Online diskussionsforum som e-learn redskab.

Benyttede undervisningsmetoder/redskaber:

- Forelæsninger opdelt af summemøder, plenumdiskussioner og praktiske regneøvelser/computersimuleringer udført af de studerende, der underbygger og visualiserer de beskrevne teorier og metoder.
- "Hands on" praktiske øvelser hvor kompleks teori afprøves i praksis.
- E-læring via et online diskussionsforum på Syddansk Universitets Blackboard.

5. Uddannelsesudvikling og universitetspædagogiks forskning

Pædagogiske udviklingsprojekter:

- H. Thisgaard, Aktiverende undervisning i komprimerede undervisningsforløb, poster præsenteret ved Universitetspædagogikum 2012-2013 afslutning, Syddansk Universitet. Formålet med projektet var at undersøge effekten af aktiverende undervisning i komprimerede undervisningsforløb (heldagsundervisning) i form af et online diskussionsforum samt praktiske/teoretiske "hands on" øvelser, eksempelvis i form af PET/SPECT scanning af rotter og mus.