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Clinical Physiology and Nuclear Medicine  
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## Qualifications

Molecular Biology, PhD, Department of Biochemistry and Molecular Biology  
Biomedicine, MSc, Department of Biochemistry and Molecular Biology

## Employment

### Associate Professor

Clinical Physiology and Nuclear Medicine  
University of Southern Denmark  
1. Jan 2015 → 31. Aug 2022

## Publications

### **Improving contrast and detectability - imaging with [55Co]Co-DOTATATE in comparison with [64Cu]Cu-DOTATATE and [68Ga]Ga-DOTATATE**

Andersen, T. L., Baun, C., Olsen, B. B., Dam, J. H. & Thisgaard, H., Feb 2020, In : Journal of nuclear medicine : official publication, Society of Nuclear Medicine. 61, 2, p. 228-233

### **[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., May 2019, In : Journal of Labelled Compounds and Radiopharmaceuticals. 62, S1, p. 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., May 2019, In : Journal of Labelled Compounds and Radiopharmaceuticals. 62, S1, p. S454-S455

### **Preparation and evaluation of [F-18] AIF-NOTA-NOC for PET imaging of neuroendocrine tumors**

Dam, J. H., Langkjær, N., Baun, C. & Olsen, B. B., May 2019, In : Journal of Labelled Compounds and Radiopharmaceuticals. 62, S1, p. S416-S417

### **Linked Hexokinase and Glucose-6-Phosphatase Activities Reflect Grade of Ovarian Malignancy**

Olsen, B. B., Gjedde, A., Vilstrup, M. H., Johnsen, I. B. G., Neumann, G., Torigian, D. A., Alavi, A. & Højlund-Carlsen, P. F., Apr 2019, In : Molecular Imaging and Biology. 21, 2, p. 375-381

### **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., Højlund-Carlsen, P. F. & Needham, D., 10. Dec 2018, In : Journal of Controlled Release. 291, p. 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. & Højlund-Carlsen, P. F., Oct 2018, In : European Journal of Nuclear Medicine and Molecular Imaging. 45, Suppl 1, p. S563 1 p., EP-0662.

**Formulation and in vivo biodistribution of <sup>57</sup>Co-porphyrin-labelled hydrophobic liquid nanoparticles**

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

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

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

**[<sup>55</sup>Co]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.

**[<sup>55</sup>Co]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, In : Journal of Labelled Compounds and Radiopharmaceuticals. 60, Suppl. 1, p. S640 1 p., P 458 .

**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, In : Molecular Imaging and Biology. 19, 6, p. 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, In : PLOS ONE. 12, 5, 12 p., e0178286.

**Identification of mediators in media-transferred radiation-induced bystander effect in breast cancer cells**

Madsen, K. L., Høilund-Carlsen, P. F. & Olsen, B. B., 2017, In : European Journal of Nuclear Medicine and Molecular Imaging. 44, Suppl. 2, p. 812 EP-0892.

**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, In : Scientific Reports. 7, 10 p., 5961.

**Biological mechanisms of FDG uptake in nonsmall cell lung cancer**

Christlieb, S. B., Olsen, B. B., Antonsen Segtnan, E., Gerke, O., Olsen, K. E. & Høilund-Carlsen, P. F., 16. Oct 2016.

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

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

**Dual time-point FDG PET/CT and FDG uptake and related enzymes in lymphadenopathies: preliminary results**

Christlieb, S. B., Nørgaard Strandholdt, C., Olsen, B. B., Mylam, K. J., Larsen, T. S., Nielsen, A. L., Röhde, M., Gerke, O., Olsen, K. E., Møller, M. B., Kristensen, B. W., Abildgaard, N., Alavi, A. & Høilund-Carlsen, P. F., Sep 2016, In : European Journal of Nuclear Medicine and Molecular Imaging. 43, 10, p. 1824-1836

**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.

**<sup>18</sup>F-fluorodeoxymannose (FDM) is a potential new tracer for inflammatory bowel disease**

Soltau, S. R., Hess, S., Olsen, B. B., Baun, C., Langkjær, N. & Høilund-Carlsen, P. F., 2016, In : European Journal of Nuclear Medicine and Molecular Imaging. 43, suppl. 1, p. S449 1 p., EP585.

**<sup>18</sup>F-Fluorodeoxymannose (FDM) is a Potential New Tracer for Inflammatory Bowel Disease**

Christiansen, S. R., Hess, S., Olsen, B. B., Baun, C., Langkjær, N. & Høilund-Carlsen, P. F., 2016.

**Biological mechanisms of FDG uptake in nonsmall cell lung cancer**

Christlieb, S. B., Olsen, B. B., Antonsen Segtnan, E., Gerke, O., Olsen, K. E. & Høilund-Carlsen, P. F., 2016, In : European Journal of Nuclear Medicine and Molecular Imaging. 43, suppl. 1, p. S479 1 p., EP671.

**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, In : Theranostics. 6, 12, p. 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, In : Molecular Imaging and Biology. 18, 3, p. 368-376

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

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

**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. May 2015.

**Inverse correlation between hexokinase activity and glucose-6-phosphatase activity in ovarian cancer**

Olsen, B. B., Vilstrup, M. H., Johnsen, I. B. G., Neumann, G., Alavi, A. & Høilund-Carlsen, P. F., 2015, In : European Journal of Nuclear Medicine and Molecular Imaging. 42, 1 Supplement, p. 456-457 1 p., P241.

**Inverse correlation between hexokinase activity and glucose-6-phosphatase activity in ovarian cancer**

Olsen, B. B., Vilstrup, M. H., Johnsen, I. B. G., Neumann, G., Alavi, A. & Høilund-Carlsen, P. F., 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, In : European Journal of Nuclear Medicine and Molecular Imaging. 42, 1 Supplement, p. 113 1 p., OP275.

**Radiation-induced media-transferred bystander effect in breast cancer cells**

Madsen, K. L., Høilund-Carlsen, P. F. & Olsen, B. B., 2015, In : European Journal of Nuclear Medicine and Molecular Imaging. 42, 1 Supplement, p. 162 1 p., OP390.

**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, In : European Journal of Nuclear Medicine and Molecular Imaging. 42, 1 Supplement, p. 244 1 p., 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. Oct 2014, In : European Journal of Nuclear Medicine and Molecular Imaging. 41, 2. Supplement, p. S251 1 p., 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. May 2014, In : Journal of Nuclear Medicine. 55, 8, p. 1311-1316

**The protein kinase CK2(Andante) holoenzyme structure supports proposed models of autoregulation and trans-autophosphorylation**

Schnitzler, A., Olsen, B. B., Issinger, O-G. & Niefind, K., 1. May 2014, In : Journal of Molecular Biology. 426, 9, p. 1871-1882

**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-Carlson, P. F. & Kristensen, B. W., 2014, In : Neuro-Oncology. 16, p. 1

**The basic principles of FDG-PET/CT imaging**

Basu, S., Hess, S., Braad, P-E., Olsen, B. B., Inglev, S. & Høilund-Carlson, P. F., 2014, In : P E T Clinics. 9, p. 355-70

**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-Carlson, P. F., May 2013, In : Journal of Labelled Compounds and Radiopharmaceuticals. 56, S1, p. S448 1 p.

**Characterization of ATM and DNA-PK wild-type and mutant cell lines upon DSB induction in the presence and absence of CK2 inhibitors**

Olsen, B. B., Fritz, G. & Issinger, O-G., 2012, In : International Journal of Oncology. 40, 2, p. 592-598

**Down-regulation of protein kinase CK2 induces autophagic cell death through modulation of mTOR and MAPK signaling pathways in human glioblastoma cells**

Olsen, B. B., Svenstrup, T. H. & Guerra, B., 2012, In : International Journal of Oncology. 41, p. 1967-1976

**Protein kinase CK2 localizes to sites of DNA double-strand break regulating the cellular response to DNA damage**

Olsen, B. B., Wang, S-Y., Svenstrup, T. H., Chen, B. P. C. & Guerra, B., 2012, In : B M C Molecular Biology. 13, p. 7-19

**Interaction between CK2 $\alpha$  and CK2 $\beta$ , the Subunits of Protein Kinase CK2: Thermodynamic Contributions of Key Residues on the CK2 $\alpha$  Surface**

Raaf, J., Bischoff, N., Kloppfleisch, K., Brunstein, E., Olsen, B. B., Vilck, G., Litchfield, D., Issinger, O-G. & Niefind, K., 1. Feb 2011, In : Biochemistry. 50, 4, p. 512-22 11 p.

**Enzymatic activity with an incomplete catalytic spine: insights from a comparative structural analysis of human CK2 $\alpha$  and its paralogous isoform CK2 $\alpha'$**

Bischoff, N., Raaf, J., Olsen, B. B., Bretner, M., Issinger, O-G. & Niefind, K., 2011, In : Molecular and Cellular Biochemistry. 356, 1-2, p. 57-65

**Lack of the catalytic subunit of DNA-dependent protein kinase (DNA-PKcs) is accompanied by increased CK2 $\alpha'$  levels**

Olsen, B. B., Fischer, U., Rasmussen, T. D. L., Montenarh, M., Meese, E., Fritz, G. & Issinger, O-G., 2011, In : Molecular and Cellular Biochemistry. 356, 1-2, p. 139-147

**Role of polyamines in determining the cellular response to chemotherapeutic agents: modulation of protein kinase CK2 expression and activity**

Kreutzer, J. N., Olsen, B. B., Lech, K., Issinger, O-G. & Guerra, B., 2011, In : Molecular and Cellular Biochemistry. 356, 1-2, p. 149-158

**Structure of the Human Protein Kinase CK2 Catalytic Subunit CK2 $\alpha'$  and Interaction Thermodynamics with the Regulatory Subunit CK2 $\beta$**

Bischoff, N., Olsen, B. B., Raaf, J., Bretner, M., Issinger, O-G. & Niefind, K., 2011, In : Journal of Molecular Biology. 407, 1, p. 1-12

**Mapping of the interaction sites between Wee1 kinase and the regulatory  $\beta$ -subunit of protein kinase CK2**

Olsen, B. B., Kreutzer, J. N., Watanabe, N., Holm, T. & Guerra, B., 2010, In : International Journal of Oncology. 36, p. 1175-1182

**Regulation of DNA-dependent protein kinase by protein kinase CK2 in human glioblastoma cells**

Olsen, B. B., Issinger, O-G. & Guerra, B., 2010, In : Oncogene. 29(45), p. 6016-26

**Structural basis of the constitutive activity of protein kinase CK2**

Olsen, B. B., Guerra, B., Niefind, K. & Issinger, O-G., 2010, *Methods in Enzymology*. Conn, P. M. (ed.). Academic Press, Vol. 484. p. 515-529

**Selectivity analysis of protein kinase CK2 inhibitors DMAT, TBB and resorufin in cisplatin-induced stress responses**

Fritz, G., Issinger, O-G. & Olsen, B. B., 1. Nov 2009, In : *International Journal of Oncology*. 35, 5, p. 1151-1157 6 p.

**Resorufin: a lead for a new protein kinase CK2 inhibitor**

Sandholt, I. S., Olsen, B. B., Guerra, B. & Issinger, O-G., 1. Apr 2009, In : *Anti-Cancer Drugs*. 20, 4, p. 238-248 10 p.

**Exploring the intramolecular phosphorylation sites in human Chk2**

Olsen, B. B., Larsen, M. R., Boldyreff, B., Niefind, K. & Issinger, O-G., 10. Nov 2008, In : *Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis*. 646, 1-2, p. 50-59 9 p.

**Ability of CK2beta to selectively regulate cellular protein kinases**

Olsen, B. & Guerra, B., 2008, In : *Molecular and Cellular Biochemistry*. 316, 1-2, p. 115-126

**Biochemical characterization of CK2alpha and alpha' paralogues and their derived holoenzymes: evidence for the existence of a heterotrimeric CK2alpha'-holoenzyme forming trimeric complexes.**

Olsen, B., Rasmussen, T., Niefind, K. & Issinger, O-G., 2008, In : *Molecular and Cellular Biochemistry*. 316, 1-2, p. 37-47

**The regulatory beta-subunit of protein kinase CK2 regulates cell-cycle progression at the onset of mitosis**

Yde, C. W., Olsen, B. B., Meek, D., Watanabe, N. & Guerra, B., 2008, In : *Oncogene*. 27, 37, p. 4986-4997

**UV light blocks EGFR signalling in human cancer cell lines**

Olsen, BB., Neves-Petersen, M. T., Klitgaard, S., Issinger, OG. & Petersen, S. B., 1. Jan 2007, In : *International Journal of Oncology*. 30, 1, p. 181-185 4 p.

**Emodin negatively affects the phosphoinositide 3-kinase/AKT signalling pathway: a study on its mechanism of action**

Olsen, B. B., Bjørning-Poulsen, M. & Guerra, B., 2007, In : *International Journal of Biochemistry & Cell Biology*. 39, 1, p. 227-237 10 p.

**Inter- and Supramolecular Interactions of Protein Kinase CK2 and their Relevance for Genome Integrity**

Olsen, B. B., Niefind, K. & Issinger, O-G., 2007, *Genome Dynamics & Stability: Genome Integrity*. Lankenau, D-H. (ed.). 1 ed. Springer Science+Business Media, Vol. 1. p. 315-342 28 p.

**BID, an interaction partner of protein kinase CK2alpha**

Olsen, B. B., Petersen, J. & Issinger, O-G., 2006, In : *Biological Chemistry*. 387, 4, p. 441-449

**Purification and characterization of the CK2alpha' -based holoenzyme, an isozyme of CK2alpha: A comparative analysis**

Olsen, B. B., Boldyreff, B., Niefind, K. & Issinger, O-G., 2006, In : *Protein Expression and Purification*. 47, 2, p. 651-661

**Protein kinase CK2 phosphorylates the Fas-associated factor FAF1 in vivo and influences its transport into the nucleus.**

Olsen, B. B., Jessen, V., Højrup, P., Issinger, O-G. & Boldyreff, B., 10. Jul 2003, In : *FEBS Letters*. 546, 2-3, p. 218-22 4 p.

**Disruption of the regulatory beta subunit of protein kinase CK2 in mice leads to a cell-autonomous defect and early embryonic lethality**

Buchou, T., Vernet, M., Blond, O., Jensen, H. H., Pointu, H., Olsen, B. B., Cochet, C., Issinger, O-G. & Boldyreff, B., 2003, In : *Molecular and Cellular Biology*. 23, 3, p. 908-915 7 p.

## Activities

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

Christina Baun (Author), Anne Lerberg Nielsen (Co-author), Oke Gerke (Co-author), Helge Thisgaard (Co-author), Kirsten Falch Braas (Co-author), Poul Flemming Høilund-Carlsen (Co-author), Birgitte Brinkmann Olsen (Co-author)  
13. Oct 2018 → 17. Oct 2018

### **2nd Odense Spring Meeting**

Birgitte Brinkmann Olsen (Speaker)  
12. Apr 2016

### **EANM**

Birgitte Brinkmann Olsen (Participant)  
10. Oct 2015 → 14. Oct 2015

### **15th international congress on radiation research**

Birgitte Brinkmann Olsen (Participant)  
25. May 2015 → 29. May 2015

### **Protein Kinase CK2 – et centralt protein i kræft**

Birgitte Brinkmann Olsen (Lecturer)  
3. Nov 2010

### **1st European Duolink User Meeting**

Birgitte Brinkmann Olsen (Participant)  
18. Oct 2010 → 19. Oct 2010

### **Lack of the Catalytic Subunit of DNA-Dependent Protein Kinase (DNA-PKc) is accompanied by increased CK2alpha' levels**

Birgitte Brinkmann Olsen (Lecturer)  
7. Sep 2010 → 10. Sep 2010

### **23. Årsmøde i Dansk Selskab for Cancerforskning**

Birgitte Brinkmann Olsen (Participant)  
7. May 2010

### **6th international conference on Inhibitors of Protein kinases**

Birgitte Brinkmann Olsen (Participant)  
27. Jun 2009 → 1. Jul 2009