

Anette Sams' Curriculum Vitae

Anette Sams Nielsen, Pharmacist and PhD in Pharmaceutical R&D, Entrepreneur in Life ScienceLangs Hegnet 88, DK-2800 Kgs. Lyngby; Tel. (+45) 2634 3323; sams@epoqe.dk Born 30 January 1971. Married. Two children.

Brief

- Specialist in vitro and translational pharmacologist in vascular and metabolic disease
- Proven track record in identification of pharmaceutical target opportunities
- Health communication: Health potentials in understanding the biological journey of sugar

Current titles and affiliations

Senior Scientist at Rigshospitalets Forskerpark (from 2016)
Founder and communicator at Epoqe Aps (from 2015)

University degrees

Ph.D. 1997-09 – 2000-09: University of Copenhagen (Former Royal Danish School of Pharmacy).
PhD thesis in vascular pharmacology. 'Characterisation of CGRP induced effects in human and guinea pig cerebral arteries – Chasing functional receptor heterogeneity, 2000'.
Master in Pharmaceutical Sciences/Pharmacist 1991-09 – 1996-08: Former Royal Danish School of Pharmacy
Master thesis in receptor imaging and tracer production: 'Autoradiographic studies of CGRP receptors in rat brain, 1996'.

Positions

Epoqe Aps (2015 -)

2015 Founder of Epoqe Aps, Lecturer of *Biologik*. Epoqe provides lectures and workshops (www.epoqe.dk and www.anettesams.dk) about the fascinating 'journey of sugar in the humanbody'. This story provides a huge health potential for everyone interested -and for society. Costumers: Companies with employee health ambitions, Health- and Medical Centers, Kommuner, Foreninger, Højskoler, Efterskoler, Aftenskoler, Patientforeninger (Diabetesforeningen, Hjerteforeningen, Kræftens Bekæmpelse), Sports klubber.

Rigshospitalet, Forskerparken, Clinicaland experimental research, (2016-)

2016 Senior Scientist. Research within endogenous vascular repairmechanisms. Supervision of master and PhD students.

Novo Nordisk A/S (2001-2015)

2012-10 Director and manager of *Diabetic Complications Biology*.

2010-01 Manager of *Diabetes Inflammation*, HRI. Heading a diabetes biologydepartment of 10 scientist, 10 technicians and 5 masters/PhD students working within inflammation in diabetes. Involved in setting up models of β -cell,vascular and muscle and fat inflammation. Building scientific collaborations withinternal and external experts.

2009-10 Principal Scientist in *Diabetes Biology*.Driving scientific focus on inflammation and vascular disease.

2006-04 Project Manager, *Innovation Focus Group Chair, Research Scientist*. Establishing in vitro models of epithelial barrier and biology, proposing andmanaging peptide delivery projects. Setup endothelial and leukocyte models of inflammation in diabetes and proposing 'Diabetes Inflammation' as a novel research area.

2001-03 Research Scientist in *Department of Molecular Pharmacology*. Responsible for setting up bioassays, screening platforms and mode of actionmodels in vitro (gut cells, β -cells, hepatocytes, adipocytes, and musclecells). Target evaluations and recommendations.

Copenhagen University (1996-2001)

2000-09 – 2001-03 *Amanuensis and research fellow*. Funding raised for continued research within perivascular neuropeptide re-uptake.

1997-10 – 2000-09 *Ph. D student*. Supervisor Ass. Prof. Inger Jansen Olesen and Prof. Jan Engberg. Stays abroad: University of California, Irvine; Prof. Sue Duckles and Diana Krause; University of Szeged, Hungary, Prof. Laszlo Vescei.

1996-09 – 1997-10 *Amanuensis and research fellow*. Preparation of Ph. D proposal, vascular GPCR signalling, teaching biology and chemistry.

Lecturing, supervision and masters/PhD opponent

Academic lecturing at Copenhagen University, DIS, Novo Nordisk and at international scientific conferences. Course director at Copenhagen University (MIND courses).

Academic supervision of PhD students, post docs and master students. Driver and supervisor of PhD and post doc applications for CORA, Novo Nordisk. Censor for master students and PhD opponent at Copenhagen University. Mentor (Pharma DK). Workshops with lectures of *Biologik* for Companies, Health Centers, Schools, Patient Organizations etc.

Presentations at international scientific conferences

Metabolic Syndrome – focus on cardiovascular disease 2018, Portugal (The endothelial border to health); Lean product and process development exchange 2014, DK (Agile knowledge management in a novel research area); 18th EASD

Oxford Hagedorn Workshop 2013, UK (Glomerular inflammation in DN); CGRP 2010, NZ (Oral scientific 'hot topic' presentation); Keystone Macrophage/Atherosclerosis, 2010 (Poster presentation); Keystone Vasculature/Complications of obesity, 2009 (Poster presentation), Drug Delivery Summit 2007, London, UK (Oral presentation); CGRP 2001, Copenhagen (Oral presentation); Brain '99, 1999, Copenhagen (2 posters), Danube Symposium 1999, Szeged, Hungary (2 posters); CGRP and related peptides, 1998, Shaftesbury, UK (1 poster).

Major meeting organization

Experimental in organization of scientific advisory board meetings and topic specific conferences and workshops (e.g. Diabetic Complications Advisory Board, 2012 with Allan E. Karlsen; The first Hagedorn IdeaShop: Inflammation and autoimmunity in T2D, 2011 with Matthias von Herrath and Allan E. Karlsen; CGRP 2001 with Lars Edvinsson and Inger Jansen Olesen; ULLA Summer School 1999, Copenhagen, University of Copenhagen).

Publications

1. Sams A, Jansen-Olesen I. Expression of calcitoninreceptor-like receptor and receptor-activity modifying proteins in human cranial arteries. *Neuroscience Letters*, 258: 41-44, 1998.
2. Sams A, Yenidunya A, Engberg J, Jansen-Olesen I. Equipotent invitro actions of α - and β -CGRP on guinea pig basilar artery are likely to be mediated via CRLR derived CGRP receptors. *Regulatory Peptides*, 85:67-75, 1999.
3. Sams A, Knyihár-Csillik E, Engberg J, Szok D, Tajti J, Bodi I, Edvinsson L, Vécsei L, Jansen-Olesen I. CGRP and Adrenomedullin receptor populations in human cerebral arteries: In vitro pharmacological and molecular investigations in different artery sizes. *European Journal of Pharmacology*, 408: 183-193, 2000.
4. Sams Nielsen A, Orskov C, Jansen-Olesen I. Pharmacological evidence for CGRP uptake into perivascular capsaicin sensitive nerve terminals. *British Journal of Pharmacology*, 132:1145-1153, 2001. **This paper was highlighted by Lecci in *TIPS*, 22 (7): 340, 2001.**
5. Hasbak P, Sams A, Schifter S, Longmore J, Edvinsson L. CGRP receptors mediating CGRP-, adrenomedullin- and amylin-induced relaxation in porcine coronary arteries. *British Journal of Pharmacology*, 133:1405-13, 2001.
6. Edvinsson L, Sams A, Jansen-Olesen I, Tajti J, Kane SA, Rutledge RZ, Koblan KS, Longmore J. Characterisation of the effects of a nonpeptide CGRP receptor antagonist in SK-N-MC cells and isolated human cerebral arteries. *European Journal of Pharmacology*, 415: 39-44, 2001.
7. Sams A, Hastrup S, Andersen M, Thim L. Naturally occurring glucagon-like peptide-2 (GLP-2) receptors in human intestinal cell lines. *European Journal of Pharmacology*, 532:18-23, 2006.
8. Ohashi K, Parker JL, Ouchi N, Higuchi A, Vita JA, Gokce N, Pedersen AA, Kalthoff C, Tullin S, Sams A, Summer R, Walsh K. Adiponectin Promotes Macrophage Polarization toward an Anti-inflammatory Phenotype. *J Biol Chem*. 26;285(9):6153-60, 2010.
9. Cummings BP, Stanhope KL, Graham JL, Baskin DG, Griffen SC, Nilsson C, Sams A, Knudsen LB, Raun K, Havel PJ. Chronic administration of the glucagon-like peptide-1 analog, liraglutide, delays the onset of diabetes and lowers triglycerides in UCD-T2DM rats. *Diabetes*, 59(10):2653-61, 2010.
10. Blaedel M, Boonen H, Raun K, Sheykhzade M, Sams A. Early onset Inflammation in Pre-Insulin Resistant Diet Induced Obese Rats Does not Affect the Vasoreactivity in isolated Small Mesenteric Arteries. *Vascular Pharmacology*, 90(3-4): 125-132, 2012.
11. Tullin S, Sams A, Brandt J, Dahl K, Gong W, Jeppesen CB, Krogh TN, Olsen GS, Liu Y, Pedersen AA, Petersen JM, Rolin B, Wahlund PO, Kalthoff C. Recombinant adiponectin does not lower plasma glucose in animal models of type 2 diabetes. *PLoS One* 7(10), 2012.
12. Fink LN, Oberbach A, Costford SR, Chan KL, Sams A, Blüher M, Klip A. Expression of anti-inflammatory macrophage genes within skeletal muscle correlates with insulin sensitivity in human obesity and type 2 diabetes. *Diabetologia*. 2013 Jul;56(7):1623-8.
13. Fink LN, Costford SR, Lee YS, Jensen TE, Bilan PJ, Oberbach A, Blüher M, Olefsky JM, Sams A, Klip A. Pro-inflammatory macrophages increase in skeletal muscle of high fat-Fed mice and correlate with metabolic risk markers in humans. *Obesity (Silver Spring)*. 2014 Mar;22(3):747-57.
14. Smillie SJ, King R, Kodji X, Outzen E, Pozsgai G, Fernandes E, Marshall N, de Winter P, Heads RJ, Dessapt-Baradez C, Gnudi L, Sams A, Shah AM, Siow RC, Brain SD. An ongoing role of α -calcitonin gene-related peptide as part of a protective network against hypertension, vascular hypertrophy and oxidative stress. *Hypertension*, 63(5):1056-62, 2014.
15. Mayer C, Bergholdt R, Cucak H, Rolin BC, Sams A, Rosendahl A. Neutralizing IL20 antibody treatment significantly modulates low grade inflammation without affecting HbA1c in type 2 diabetic db/db mice. *Plos One*, 10 (7), 2015.
16. Blaedel M, Sams A, Boonen HC, Sheykhzade M. Increased Contractile Response to Noradrenaline Induced By Factors Associated with the Metabolic Syndrome in Cultured Small Mesenteric Arteries. *Pharmacology*, 97(1-2):48-56, 2015.
17. Outzen EM, Zaki M, Abdolalizadeh B, Sams A, Boonen HC, Sheykhzade M. Translational Value of Mechanical and Vasomotor Properties of Mouse Isolated Mesenteric Resistance-Sized Arteries. *Pharmacology Research & Perspectives*, 3 (6), 2015.
18. Nilsson C, Kruse Hansen T, Rosenquist C, Hartmann B, Kodra JT, Lau J, Ryberg Clausen T, Raun K, Sams A. Long acting analogue of the Calcitonin gene-related peptide induces positive metabolic effects and secretion of the Glucagon-Like Peptide-1. *European Journal of Pharmacology*, 773:24-31, 2016.
19. Outzen EM, Zaki M, Mehryar R, Abdolalizadeh B, Sajid W, Boonen HC, Sams A, Sheykhzade M. LPS, but not Angiotensin II, Induces Direct Pro-inflammatory Effects in Cultured Mouse Arteries and Human Endothelial and Vascular Smooth Muscle Cells. *Basic Clin Pharmacol Toxicol*, 2016.

20. Aubdool AA, Smillie-SJ, Thakore-P, Schnelle-M, Srivastava-S, Alawi-KM, Argunhan-F, Wilde-E, Mitchell-J, Farrell-Dillon K, Richards DA, Maltese G, Shah AM, Siow RC, Sams A, Brain SD. A novel α -calcitonin gene-related peptide analogue protects against end-organ damage in experimental hypertension, cardiac hypertrophy and heart failure. *Circulation* 25;136(4):367-383, 2017.
21. Sams A, Hansen NW, Hansen AJ. The endothelial border to health: Mechanistic evidence of the hyperglycemic culprit of inflammatory disease acceleration. *IUBMB Life* 69(3):148-161, 2017
22. Sheykhzade M, Amandi N, Pla MV, Abdolalizadeh B, Sams A, Warfvinge K, Edvinsson L, Pickering DS. Binding and functional pharmacological characteristics of gepant-type antagonists in rat brain and mesenteric arteries. *Vascular Pharmacology* 90:36-43, 2017.
23. Sheykhzade M, Abdolalizadeh B, Koole C, Pickering DS, Dreisig K, Johansson SE, Abboud BK, Dreier R, Berg JO, Jeppesen JL, Sexton PM, Edvinsson L, Wootten D, Sams A. Vascular and molecular pharmacology of the metabolically stable CGRP analogue, SAX. *Eur J Pharmacol.* 15;829:85-92, 2018.
24. Hansen NW, Sams A. The Microbiotic Highway to Health—New Perspective on Food Structure, Gut Microbiota, and Host Inflammation. *Nutrients* 10(11), 1590, 2018.
25. Johansson SE, Abdolalizadeh B, Sheykhzade M, Edvinsson L, Sams A. Vascular pathology of large cerebral arteries in experimental subarachnoid hemorrhage: Vasoconstriction, functional CGRP depletion and maintained CGRP sensitivity. *Eur J Pharmacol.* 846:109-118, 2019.
26. Lee TL, Grell AS, Warfvinge K, Sheykhzade M, Edvinsson L, Sams A. CGRP in rat mesenteric artery and vein - expression, receptor presence and potential roles. *In preparation.*

Publications, patents

1. Thim L, Bang S, Schlein M, Egelund DK, Nielsen AS, Johansen NL, Madsen K, Zundel M, Thygesen P: GLP-2 compounds, formulations and uses thereof (PCT WO 2004/035624 A2).
2. Nielsen-AS, Kruse-T, Kodra-JT, Lau-JF, Kofoed-J, Raun-K, Nilsson-C: Derivatives of CGRP. (WO2011/051312 A1)
3. Nielsen AS and Edvinsson L. Patent application submitted 2018.

Publications, Book Chapters

Sams A, Jansen-Olesen I: CGRP effects in guinea pig basilar artery.
 The CGRP family: Calcitonin, gene-related peptide (CGRP), amylin, and adrenomedullin edited by David Poyner, Ian Marshall and Sue Brain, Landes Bioscience 2000

Publications, Books

1. Sams A. Sandheden om sukker, September 2017, Gyldendal
2. Sams A. Ud af diabetes 2, September 2018, Gyldendal
3. Sams A. The Truth about Sugar, January 2019, Gyldendal