

AMANDA VANG



CONTACT

 Firum
Biotechnology
Hoyvíksvegur 51,
FO-100 Tórshavn

 (+298) 774767

 amanda@firum.fo

EDUCATION

- 2004 - 2010** **PhD in Biomedical Science, University of Connecticut Health Center, Farmington, CT, USA:**
- Area of concentration: Immunology, cell signaling, molecular biology
- Dissertation title:** The Role of PDE8 and cAMP effector molecules in the selective regulation of Teff cell functions
- Supervisor:** Stefan Brocke, MD, PhD
- Synopsis:** My doctoral thesis was a pre-clinical study focused on blocking chronic Inflammation associated with auto-inflammatory diseases. The direct goal was to provide data that would support testing a PDE8A Inhibitor In clinical trials. I used mouse models of multiple sclerosis and Investigated a potential therapy that works by decreasing binding between activated immune cells and blood vessel walls. Results of the thesis indicated that blocking PDE8A activity in endothelial cells and activated T cells limits physical adhesion and adhesion molecules; demonstrating that PDE8A is a promising therapeutic target.
- 1998 - 2002** **Bachelor of Arts in Neuroscience, Smith College, Northampton, MA, USA:**
- Study title:** In-situ hybridization reveals sexual dimorphism of hormone receptors in the mouse pre-optic cortex
- Supervisor:** Sandra Petersen, PhD (University of Massachussets, Amherst)

RESEARCH INTERESTS

Since I am new to aquaculture, my current interest is trying to think in a cross-disciplinary way and use my background in biomedicine to address the needs of the aquaculture industry. I am interested in developing biomarkers and research tools for rapid monitoring of fish health or environmental parameters using molecular methods such as qPCR and NGS sequencing or image-based analysis. In addition, I am interested in establishing histology for research and routine services. Beyond the scope of health monitoring, I would like to participate in projects and development plans that promote circular economy/sustainability such as testing biological effects of products made from side stream waste from fish processing or multitrophic aquaculture systems.

SPECIALIZED SKILLS

Molecular Biology

Gene expression profiling by RT-qPCR
16S rRNA amplicon sequencing
Protein ELISAs

Cell Culture

In vitro adhesion
In vitro migration
Cell activation/proliferation

Histology

Frozen and FFPE sample preparation
Immunohistochemistry
In-situ hybridization

Other

In vivo animal models
Flow cytometry

RESEARCH EXPERIENCE

- 2020-current** **Head of Department, Department of Biotechnology, Firum (P/F Fiskaaling):**
I oversee the department, supervise and support staff, and work to develop new opportunities for projects and networking. See "research Interests" for details of my research plans and goals.
- 2017-2020** **Assistant Professor, Department of Health Sciences, University of the Faroe Islands**
Developed and led several research projects related to Inflammatory diseases. My focus was on working with a multi-disciplinary group of clinicians and epidemiologists to understand why the Faroe Islands has a high rate of inflammatory diseases, especially related to the role of the microbiome and immune response. I also developed courses and taught a variety of classes on the bachelor and master's level.
- 2014-2020** **Researcher, Department of Diagnostic Medicine, National Hospital of the Faroe Islands**
Developed and led research projects, acted as a consultant to clinical staff for grant applications, edited manuscripts for publication. I also developed and led two research projects which established a working protocol of localizing proteins and mRNA in archived clinical samples and immunophenotyping of peripheral blood mononuclear cells.
- 2010-2012** **Post-doctoral fellow, Department of Immunology, University of Connecticut Health Center, Hartford, CT**
Analysed functional immune responses and cellular signalling using in vitro and in vivo mouse models of chronic inflammation.
- 2004-2010** **Doctoral Student, Department of Cell Biology, University of Connecticut Health Center, Hartford, CT**
Performed preclinical studies to demonstrate the utility of PDE8 inhibitors as a therapy for autoimmune disease and chronic inflammation.
- 2002-2004** **Research Assistant, Department of Neurology, Harvard Institutes of Medicine, Boston, MA, USA**
Developed In-situ hybridization methods for Toll-like receptor identification in brain tissue from Multiple Sclerosis patients, maintained mouse colony and timed breeding program.

GRANTS AND COLLABORATIONS

FUNDING AWARDED:

2019-2022	Faroese Research Council (1.091.000 DKK), University of the Faroe Islands Project: Characterizing the intestinal microbiome in Faroese IBD patients
2017-2019	Faroese Health Insurance Fund (890.000 DKK), National Hospital of the Faroe Islands Project: Establishing Flow Cytometry protocols for immune monitoring
2015-2017	Faroese Research Council (533.400 DKK), National Hospital of the Faroe Islands Project: Localization of PDE8A in archived intestinal biopsies

SUCCESSFUL COLLABORATIONS:

I have strong relationships with other researchers and institutions on the Faroe Islands due to my primary work place at research Park INOVA and my connection to the University of the Faroe Islands. I have participated in projects funded by Novo Nordisk together with groups in Denmark, The MS society and NIH together with groups in the United States, and am currently a partner in several Nordic applications that are under review.

SUPERVISION

I have been the primary supervisor for 4 master's thesis projects (2 in molecular biology and 2 in public health) and 1 bachelor's thesis project in molecular life sciences. The degrees were awarded through Roskilde University, Aarhus University, and University of the Faroe Islands.

PUBLICATIONS

Jóngerð Midjord, **Amanda Vang**, Turid Hammer, Johan Burisch, Kári R. Nielsen. "Increased risk of malignancy in patients with inflammatory bowel disease in a nationwide, high-incidence, population-based Faroese cohort, 1960-2014 (In preparation).

Heidi S. Mortensen, Elin Jacobsen, **Amanda Vang**, Jelena Kolarevic. "Chloride to nitrite-nitrogen ratio of up to 450:1 provided insufficient protection against nitrite uptake and accumulation in large post-smolt Atlantic salmon, commercially reared in fresh water RAS2 (In preparation).

Marjun Berbisá, Kári R. Nielsen, Johan Burisch, **Amanda Vang**. "Characterizing the intestinal microbiota in Faroese patients with existing Ulcerative Colitis" (In preparation).

Chaitali Basole, Rebecca K. Nguyen, Katie Lamothe, **Amanda Vang**, Robert Clark, George S. Baillie, Paul M. Epstein, Stefan Brocke. "PDE8 controls CD4 + T cell motility through the PDE8A-Raf-1 kinase signaling complex". Cellular Signaling, August (2017).

Amanda G. Vang, Hongli Dong, Rebecca Khan Nguyen, Chaitali Basole, William Housley, Linda Guernsey, Roger Thrall, Robert B. Clark, Paul M. Epstein, and Stefan Brocke. "Differential expression and function of PDE8 and PDE4 in effector T cells: Implications for PDE8 as a drug target in inflammation". *Frontiers in Pharmacology*, August 26 (2016).

Eyð T. Magnussen, **Amanda G. Vang**, Torkil á Steig, Shahin Gaini. "Relapsing peritonitis with *Bacillus cereus* in a patient on continuous ambulatory peritoneal dialysis". *British Medical Journal Case Reports*, April 12 (2016).

Amanda G. Vang, Shlomo Ben-Sasson, William Housley, Barbara Kream, Paul M. Epstein, Robert Clark, and Stefan Brocke. "cAMP signaling in Treg cell function and Teff cell suppression independent of PKA-CREM/ICER: a potential role for EPAC". *Biochemical Journal*, September 5 (2013).

William J. Housley, Catherine O. Adams, **Amanda G. Vang**, Stefan Brocke, Frank C. Nichols, Melissa LaCombe, Thiruchandurai V. Rajan, Robert B. Clark., "Peroxisome Proliferator-Activated Receptor γ Is Required for CD4+ T Cell-Mediated Lymphopenia-Associated Autoimmunity". *Journal of Immunology*, September 9 (2011).

Amanda G. Vang, Shlomo Z. Ben-Sasson, Hongli Dong, Barbara Kream, Michael P. DeNinno, Michelle M. Claffey, William Housley, Robert B. Clark, Paul Epstein, and Stefan Brocke. "PDE8 regulates rapid Teff cell adhesion and proliferation independent of ICER". *PLoS ONE*, August 9 (2010)

INTERNATIONAL CONFERENCES

European Crohns and Colitis Organization, Oral Presentation: Jóngerð Midjord, **Amanda Vang**, Turid Hammer, Johan Burisch, Kári R. Nielsen. "Increased risk of malignancy in patients with inflammatory bowel disease in a nationwide, high-incidence, population-based Faroese cohort, 1960-2014.

European Crohns and Colitis Organization: **Amanda Vang**, Kári R. Nielsen, Jóngerð Midjord, Marjun á Fríðriksmørk Berbisá, Ólavur Mortensen, Guðrið Andorsdóttir, Noomi O.Gregersen, Johan Burisch. Study launch: Investigating genetic and environmental factors in the faroese IBD cohort – the INCEPTION study. (Copenhagen, Denmark, March; 2019)

European Crohns and Colitis Organization: N. Ovadóttir, K. Danielsen, K. Nielsen, P. Epstein, S. Brocke, M. Kaminski, **A. Vang**. Phosphodiesterase 8A domains at the site of leucocyte–endothelial cell adhesion in ulcerative colitis submucosa. (Vienna, Austria, Feb., 2018)

Federation of Clinical Immunology Societies: Chaitali P Basole, Rebecca Nguyen, Katie Lamothe, **Amanda Vang**, Robert Clark, Paul Epstein, George Baillie, Stefan Brocke. Targeting the PDE8A-Raf-1 kinase signaling complex to treat autoimmune inflammation. (Boston, USA, June, 2016)

American Association of Immunologists: Chaitali P Basole, Rebecca Nguyen, Katie Lamothe, **Amanda Vang**, Robert Clark, Paul Epstein, George Baillie, Stefan Brocke. Targeting the PDE8A-Raf-1 kinase signaling complex to treat autoimmune inflammation. (Seattle, USA, May, 2016)

European Congress of Pathology: **Amanda G. Vang**, Kári R. Nielsen, Gunnrið Jóanesarson, Gisela Djurhuus, Ann Østerø, Maciej Kaminski. Visualizing Phosphodiesterase 8A: a novel therapeutic target for autoimmune and inflammatory disease. (London, UK, September 2014)