

Inflammation Research

Jesper Bonnet Moeller's lab.

Department of Molecular Medicine

Spring 2025



University of
Southern Denmark



Inflammation research

Translational and Functional Receptor Biology



Assoc. Prof. **Jonas Graversen**
jgraversen@health.sdu.dk

- Receptor characterization
- Protein Engineering
- Therapeutic Antibodies
- Biomarker Research

Vascular Disease, Fibrosis, and Cancer



Professor **Grith L. Sørensen**
glsoresen@health.sdu.dk

- Extracellular matrix proteins
- Development of biological therapies
- Therapeutic Mechanisms in Cancer
- Biomarker Research

Complement System and Coagulation



Assoc. Prof. **Yaseelan Palarasah**
ypalarasah@health.sdu.dk

- Antibody Development
- Inflammation and Coagulation
- Immunotrombosis
- Biomarker Research

Mucosal Immunology and Barrier Functions



Assoc. Prof. **Jesper B. Moeller**
jbmoeller@health.sdu.dk

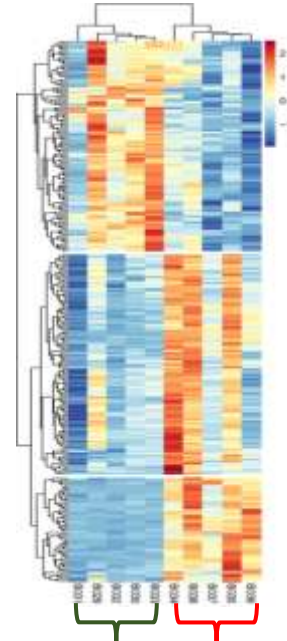
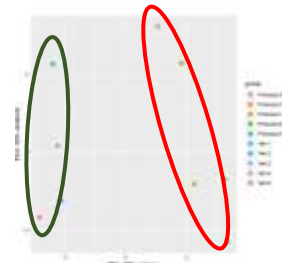
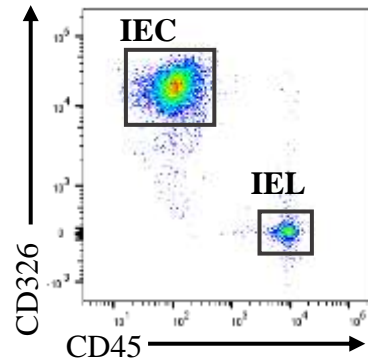
- Barrier Immunity & Integrity
- Intestinal Parasites and Fungi
- Host-Microbe Interactions
- IBD and Cancer

The Moeller Lab

Main Research Interests

To explore novel pathways and mechanisms associated with host-microbe interactions at barrier surfaces in the context of human health and disease

- **Most of our research is rooted in animal models of disease**
- **We employ state-of-the-art technologies**
- **We always try to have a translational perspective (from Bench to Bedside)**



The Moeller Lab

Mucosal Immunology and Barrier Functions

Research Interest

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Research Group

Group leader



Jesper B. Moeller

Staff technician

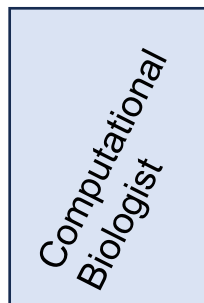


Rikke Hadow

Postdocs



Magdalena
Dubik



Interviews

Ph.D. students



Rasmus
Duus



Kat
Kiillerich

M.Sc.



Henriette
Kristensen
(Pharmacy)

B.Sc.



Katrine
Madsen
(Biomed.)

Undergraduate projects in the Moeller Lab

Molecular Screening for the presence of commensal intestinal protozoa in IBD and healthy cohorts using quantitative PCR.

Bachelor project: **Simon Hoang Dinh** - Pharmacy student – Spring 2023

New Study: Fecal Material Transplant (FMT) in Rheumatoid Arthritis

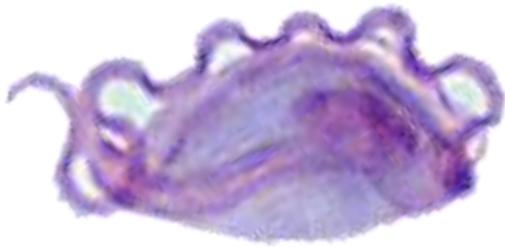
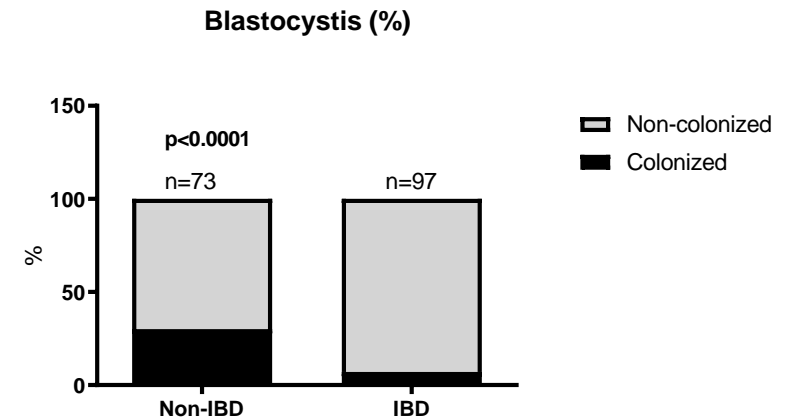
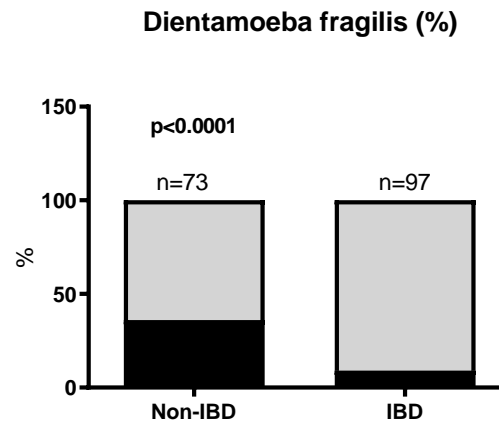
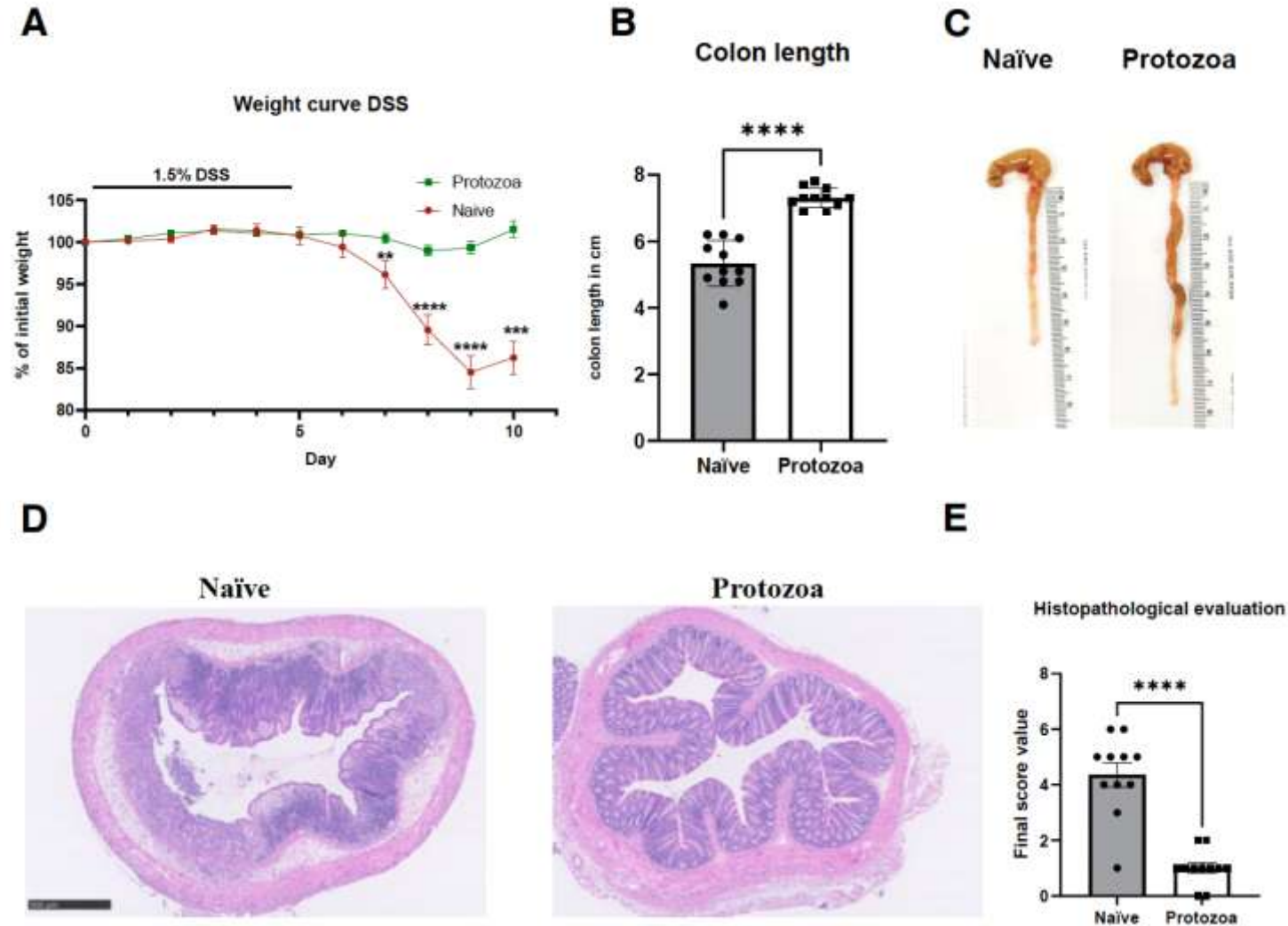


Image of protozoa



Undergraduate projects in the Moeller Lab

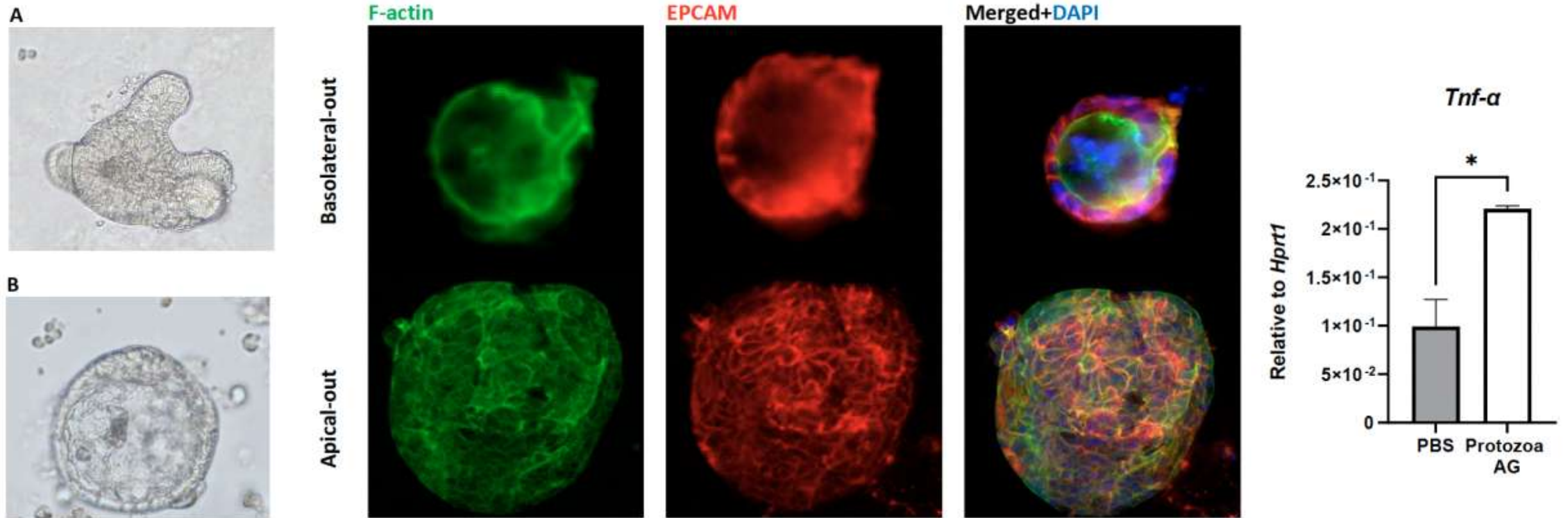
Paralouge to *Dientamoeba fragilis* in mice protects against intestinal inflammation (IBD model)



Undergraduate projects in the Moeller Lab

Intestinal organoids as a model for host-microbe interactions at the mucosal surfaces

Master's project: Isra M. Abdi (working hard in the lab) – completion winter 2024/2025

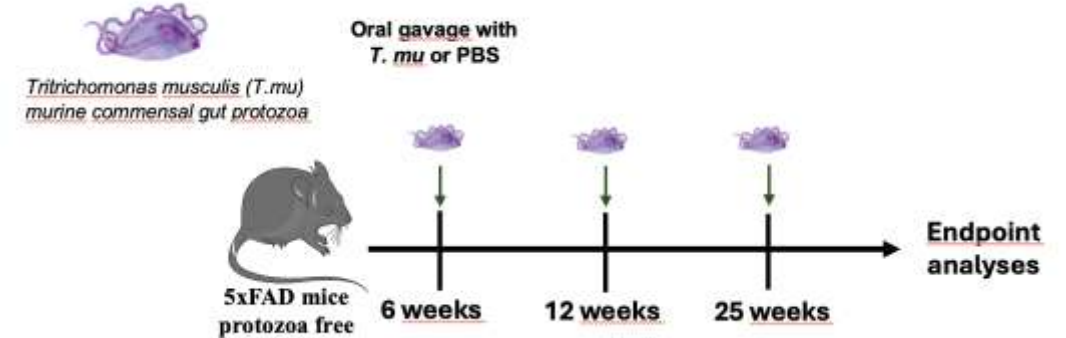
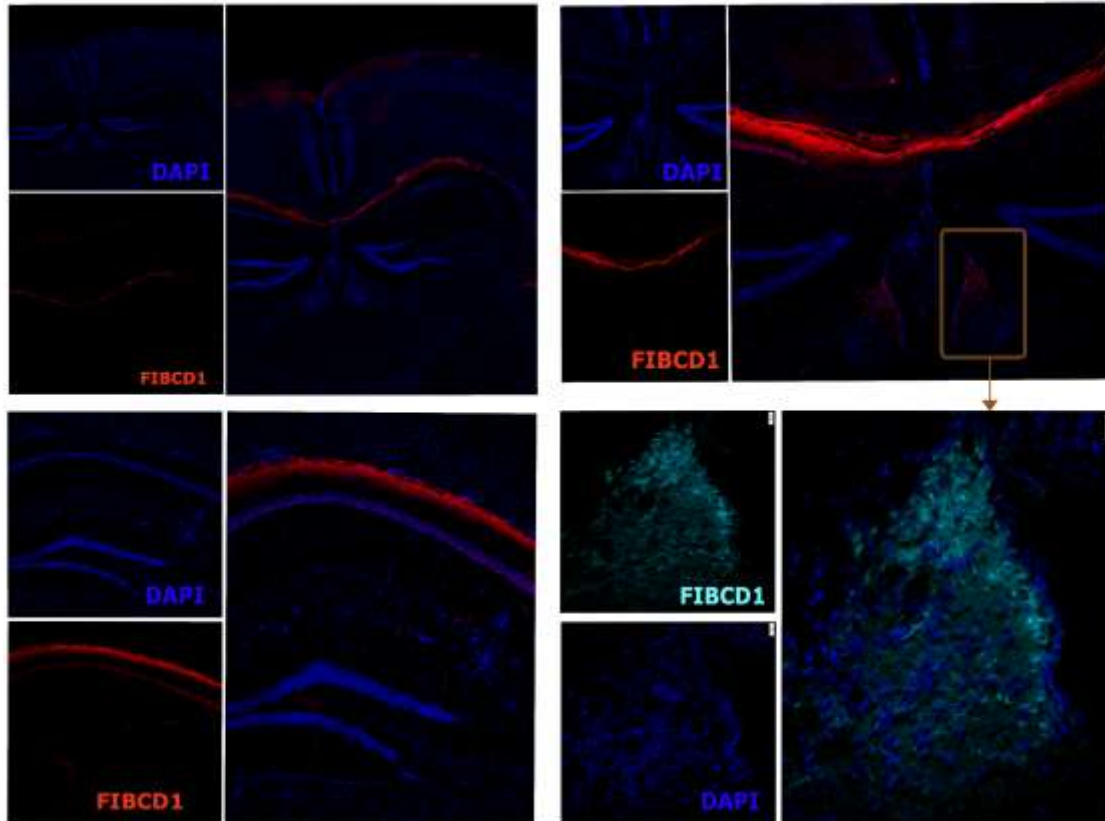


Undergraduate projects in the Moeller Lab

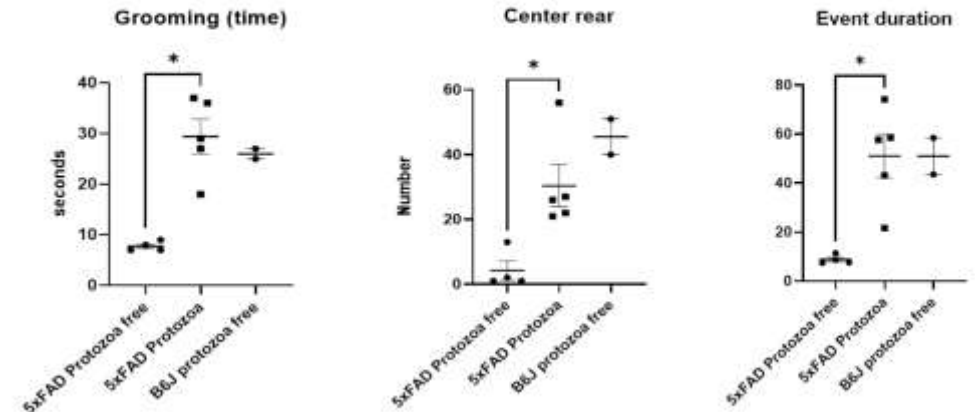
Characterization of FIBCD1 Expression in a mouse model of Alzheimer's Disease

ISA project: Katrine Madsen (Fall 2024)

Healthy mice



5xFAD mice – model Alzheimers disease



Undergraduate projects in the Moeller Lab

For all student projects in general...

- It should be well-defined with realistic aims
- Often linked and integrated into larger studies performed
- Should introduce the student to state-of-the-art technologies at the forefront of biomedical research
- Are Dynamic (developed over time) to reflect current projects and progress

Current project proposals...

- Investigating microbe interactions with the intestinal epithelium using organoid models
 - Fungi, protozoa, bacteria
 - Co-culture models (immune cells vs. epithelium)
- Development of sensitive and specific biomarker assays for better diagnostics in IBD and colorectal cancer
- Defining the functions of soluble FIBCD1 in the activation of intestinal macrophages

Core Technologies and Methodologies

Flow Cytometry and Cell Sorting



Transcriptomics



Fluorescence Microscopy



Center for Advanced Cell Analysis^(NEW) (Best-in-class instrumentation)

- Immunophenotyping
- Isolation of cells for Sequencing
- Functional studies

IMM Sequencing^(NEW) (Local access and expertise)

- RNA-Seq
- Single Cell Analyses
- Epigenetics

Imaging platforms (Highly advanced instruments)

- 5-color immunofluorescence^(NEW)
- Confocal microscopy
- Helium-Ion Microscopy

The End 😊

Feel Free to contact us for further
information and project ideas

jbmoeller@health.sdu.dk