

# Results section

Kaare

04 November, 2022

```
## Warning: package 'tidyr' was built under R version 4.0.5
```

```
## Warning: package 'dplyr' was built under R version 4.0.5
```

## Code

## Manuscript

### Introduction

- NEC is caused by bacterial dysbiosis - we think.
- (AND) high-osmolar formula feed is hard on intestinal lining.
- (AND) Chen et al. saw NEC-like symptoms with MAT.
- (BUT) No enough on its own plus too old mice.
- (Therefore) We want to see if MAT + FF will result in more severe NEC-like symptoms. (AIM)
- (AND) FvT are currently being studied as potential remedies to NEC - thought to be mediated via stabilizing effect on microbiome.
- (Therefore) We want to see if A) we manage to induce NEC, are we able to “cure” it, or B) in case of no NEC, is FvT on it's own safe or associated with any adverse effects?

### Background

- Why we think MAT leads to intestinal dysbiosis?
  - Less immunizing milk?
- 

### Results

The main goal of this thesis project was to create a NEC mouse model by combining Maternal Antibiotics Treatment with Formula-Feeding. This hypothesis was tested in a series of experiments (Exp 1-4), each successive experiment building on the findings from the former. The following is a description of each experiment. An abridged version of each experiment is provided, followed by a detailed description of experimental setup and results.

## Exp 1: Model feasibility

### Rationale:

- *Chen et al.*, showed that treatment with antibiotics during pregnancy(Maternal Antibiotics Treatment, **MAT**) “resulted” in mild NEC-like symptoms in the offspring.
- XXX [*Find paper*] found formula-feeding to be damaging to the intestine.
- One of the primary causal factors of NEC is formula-feeding (paper on what is thought to cause NEC).
- We tested the hypothesis that MAT combined with formula feeding (**FF**) would result in a worsened phenotype - even more NEC-like than either treatment on it’s own.

### Aim:

- To test whether it was possible to keep mice alive from postnatal day 3 and 48 hours onwards, while being separated from the mother.
- Whether combining a broad spectrum antibiotic with formula-feeding will result in NEC-like symptoms such as:
- Visible signs of intestinal inflammation and / or greater levels of pro-inflammatory cytokines expressed in tissue or serum

### Conclusion:

- Survival rate: xx of 38 (%)
- Visual inspection: no clear signs of intestinal inflammation
- Cytokine expression: Statistically significant differences in the level of STATISTICAL-SIGNIF-CYTOKINE-NAMES.