Microbiota transplantation strategies to improve neonatal gut health

CPH PIG annual seminar 2021

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Animal experimental facilities

Neonatal intensive care unit

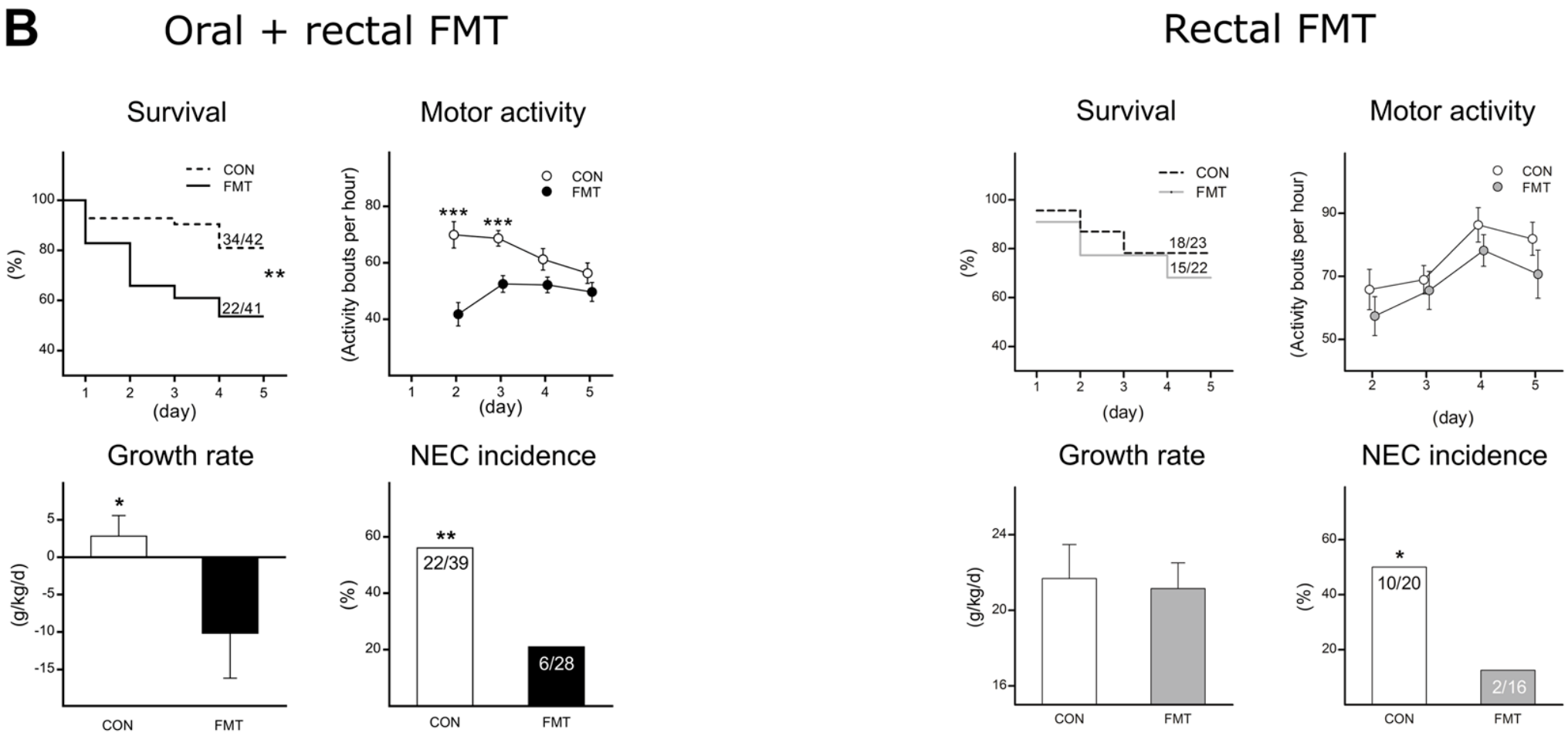
Milk feeding unit

Microbiota transplantation

Microbiota transplantation – experimental variables

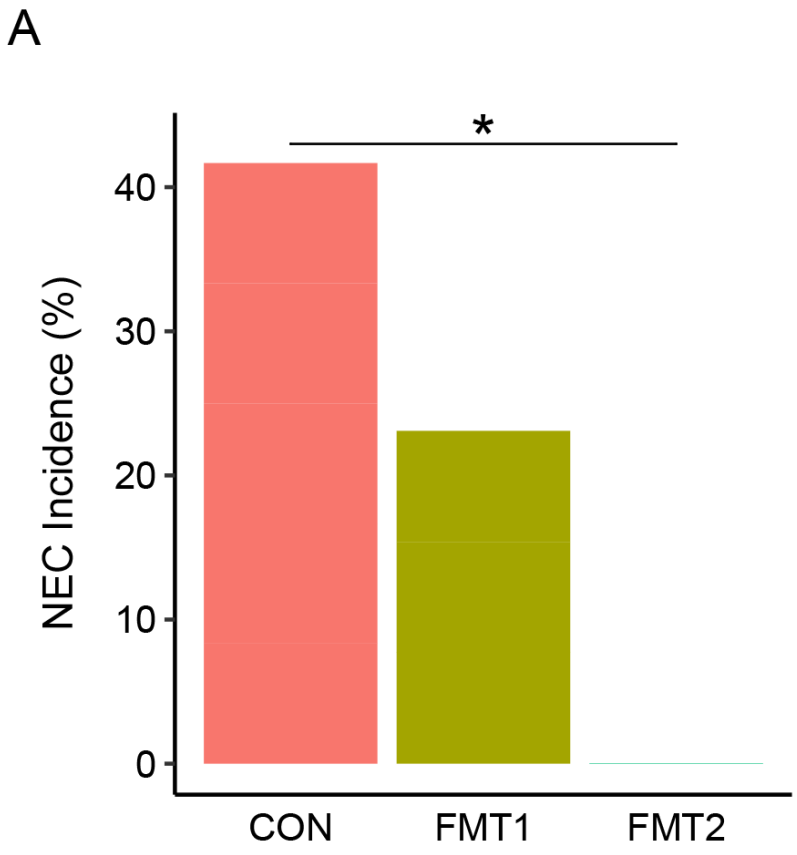
- Route of administration
- Donor specificity
- Interaction with antibiotics
- Timing
- Sterile filtering

Route of administration



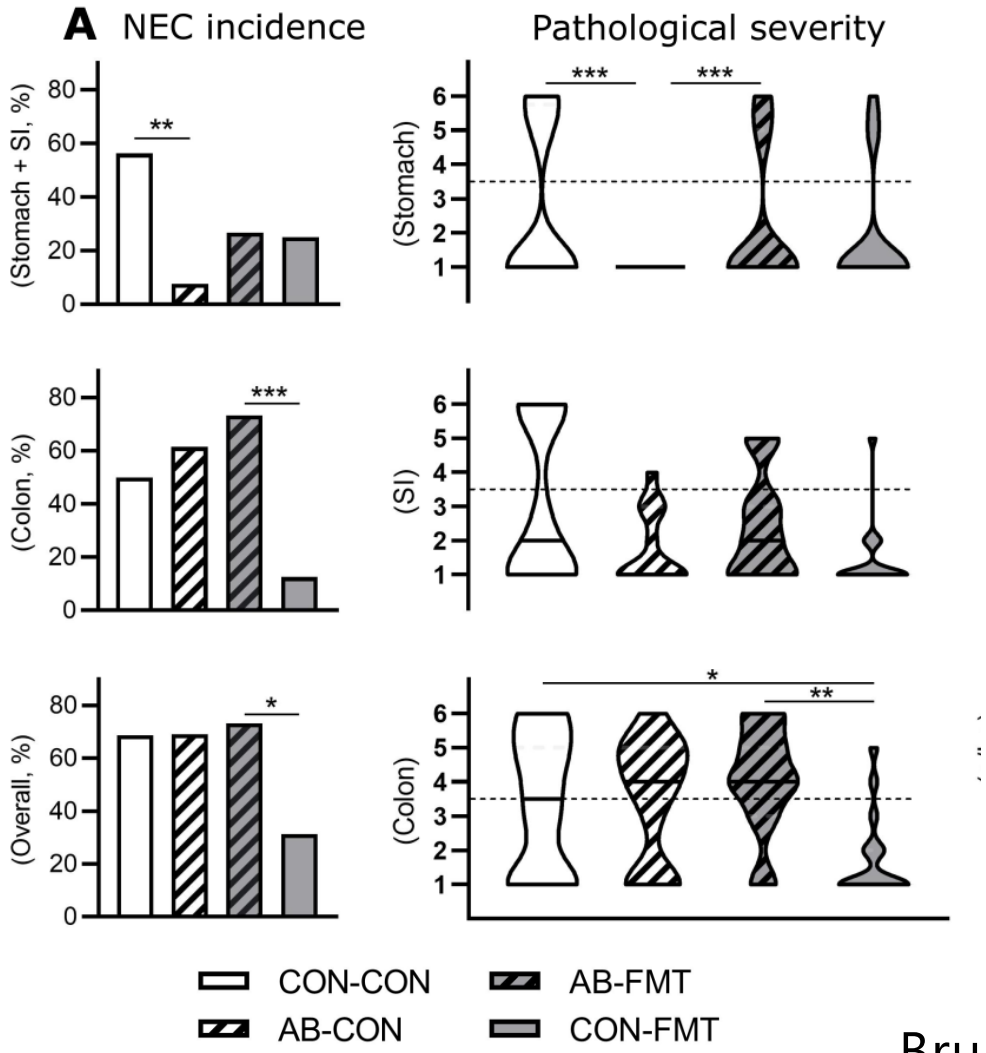
Brunse et al (2018) *ISME J*

Donor specificity



Hui et al *under review*

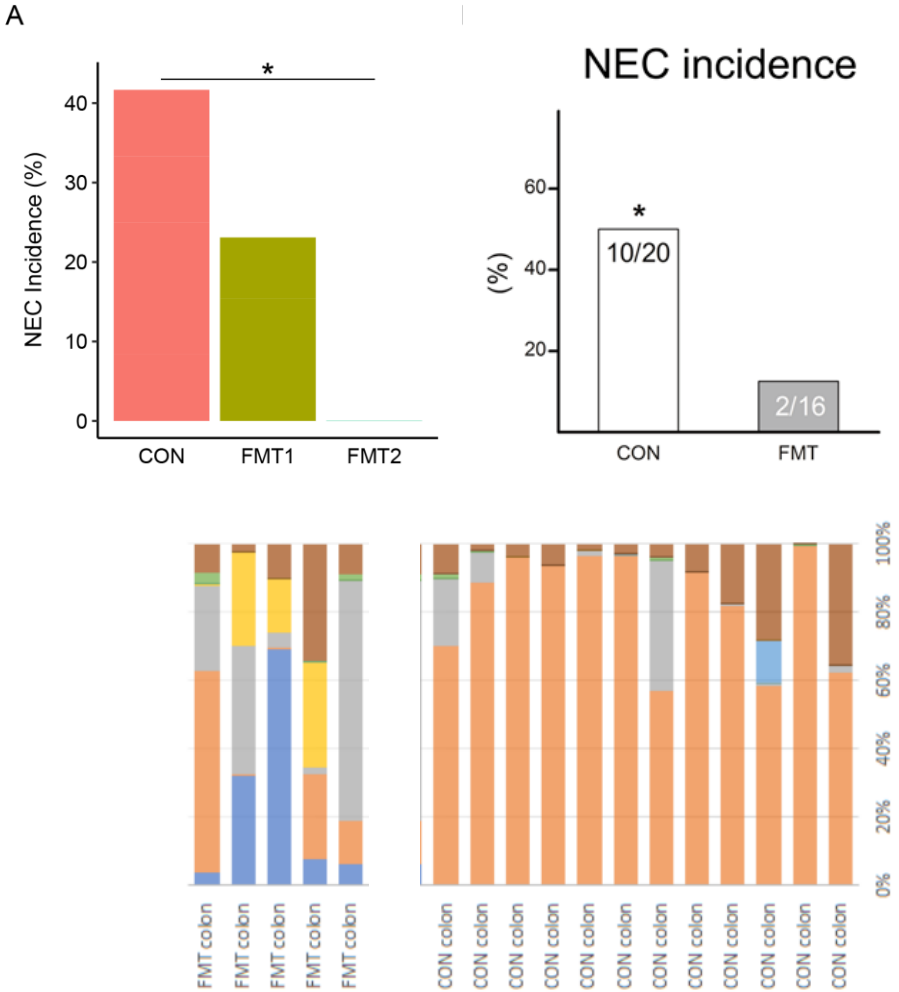
Interactions with antibiotics



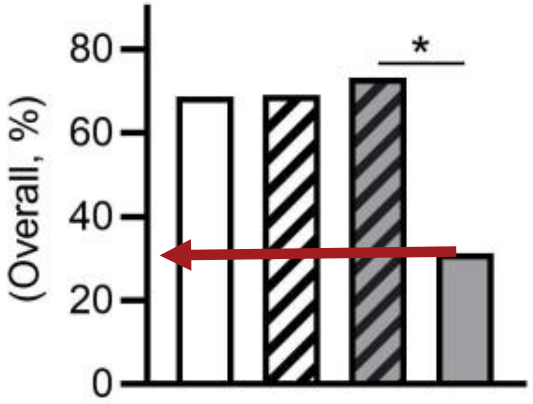
Brunse et al (2020) *Gut Microbes*

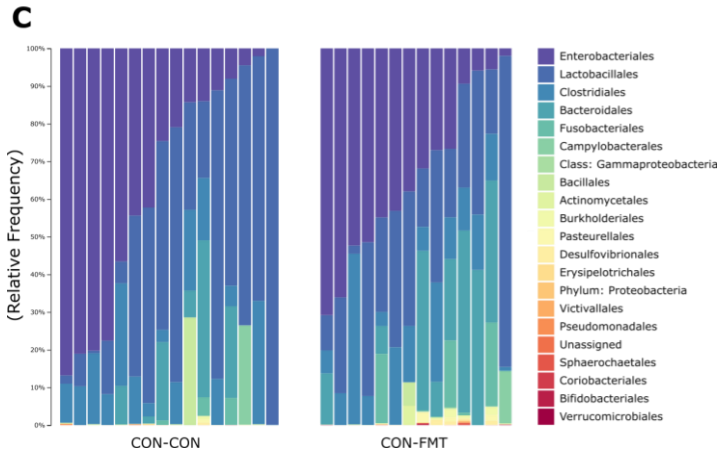
Timing

Inoculation on day 1

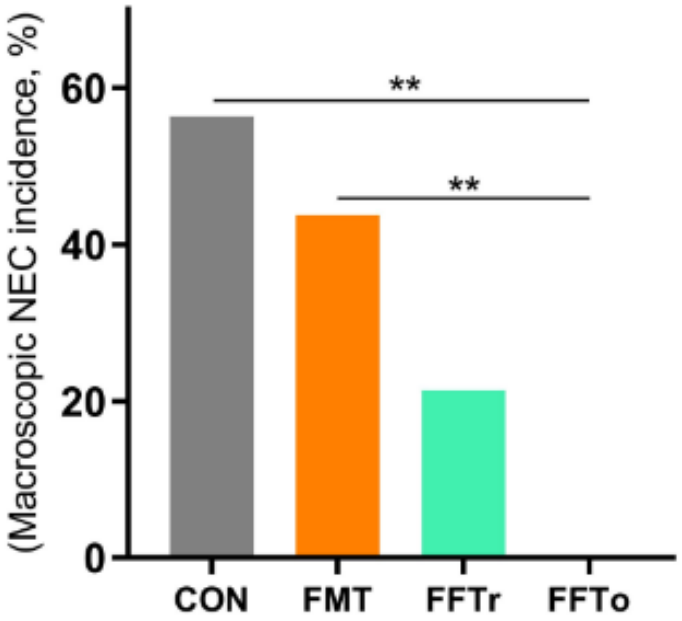


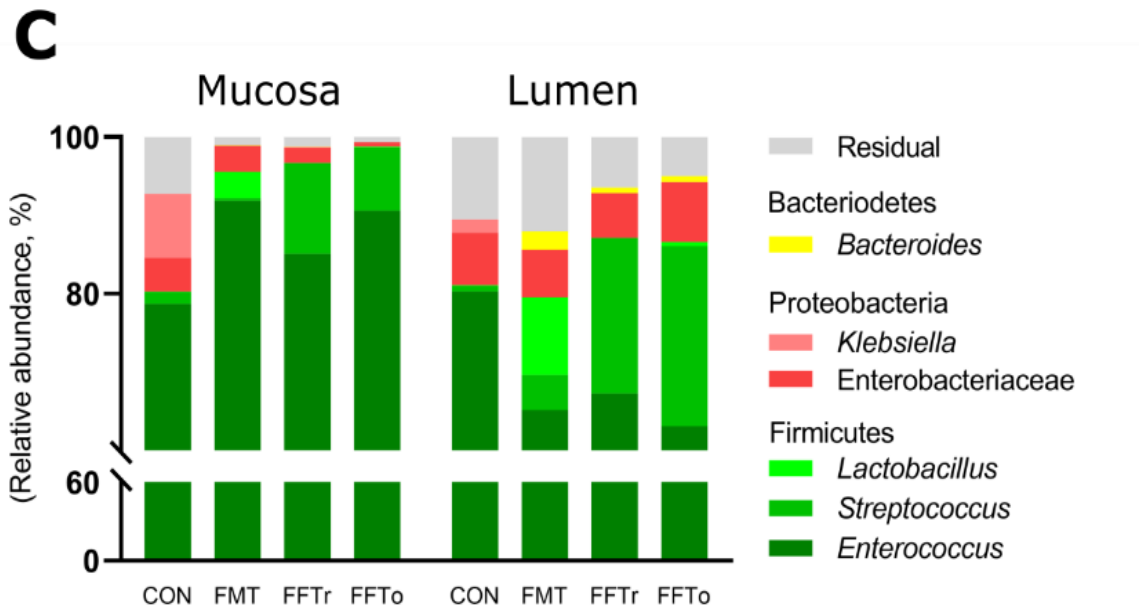
Inoculation on day 5





Sterile filtering





Brunse et al (2020) *BioRXiv*

Take-home message

- Rectally administered FMT is safer than oral administration
- Not all pigs are equally suited as fecal donors
- Antecedent antibiotics may negatively affect FMT
- Early FMT administration appears superior to delayed
- Bacteria-free fecal filtrate is safer and superior to FMT