

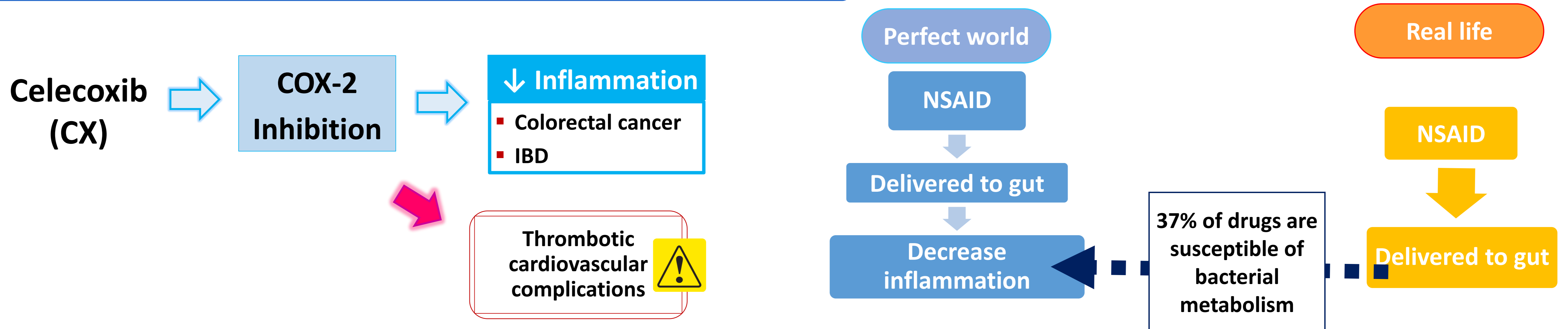
# DRUG-BUG CROSTALK IMPACTS COMPOSITIONAL AND FUNCTIONAL FEATURES OF *IN VITRO* GUT MICROBIAL ECOSYSTEM

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## Microbiome as the next frontier for gut-targeted drugs



## Using *in vitro* models for assessing drug-bug crosstalk

### Screening for responsive/not responsive

#### Batch system

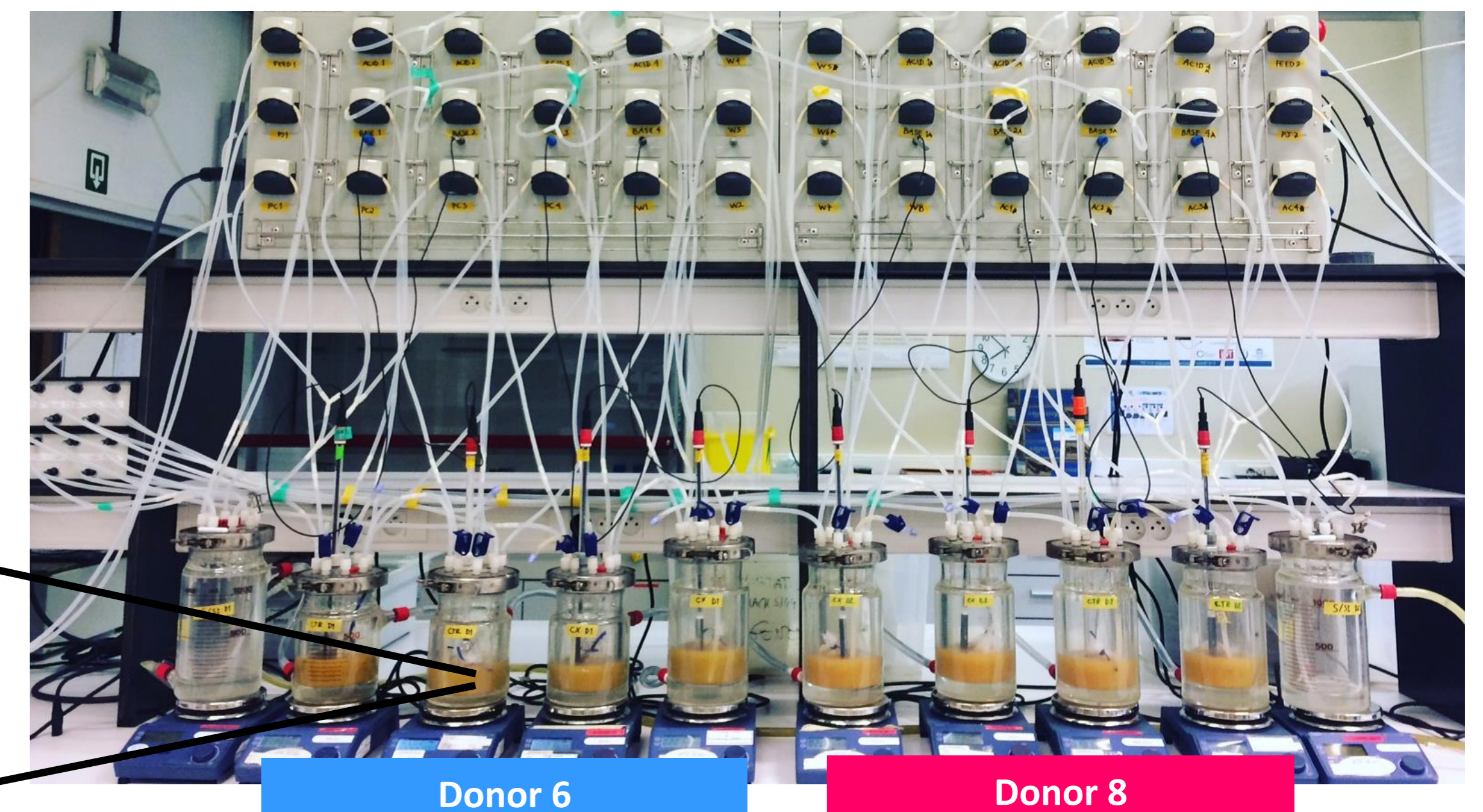
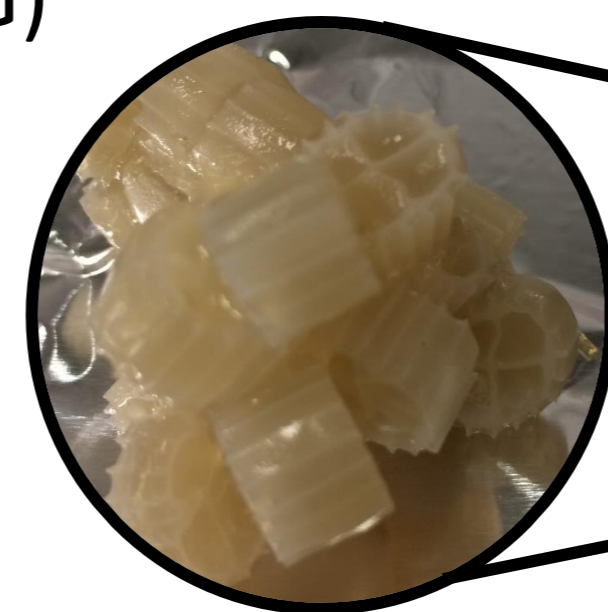
- 8 donors
- 16 h (proximal colon conditions)
- Clinical CX dose + carrier (PEG)



### Long term supplementation

#### M-SHIME system

- 2 donors
- 2wk stabilization + 2wk treatment + 1wk washout
- Clinical CX dose + carrier (PEG)

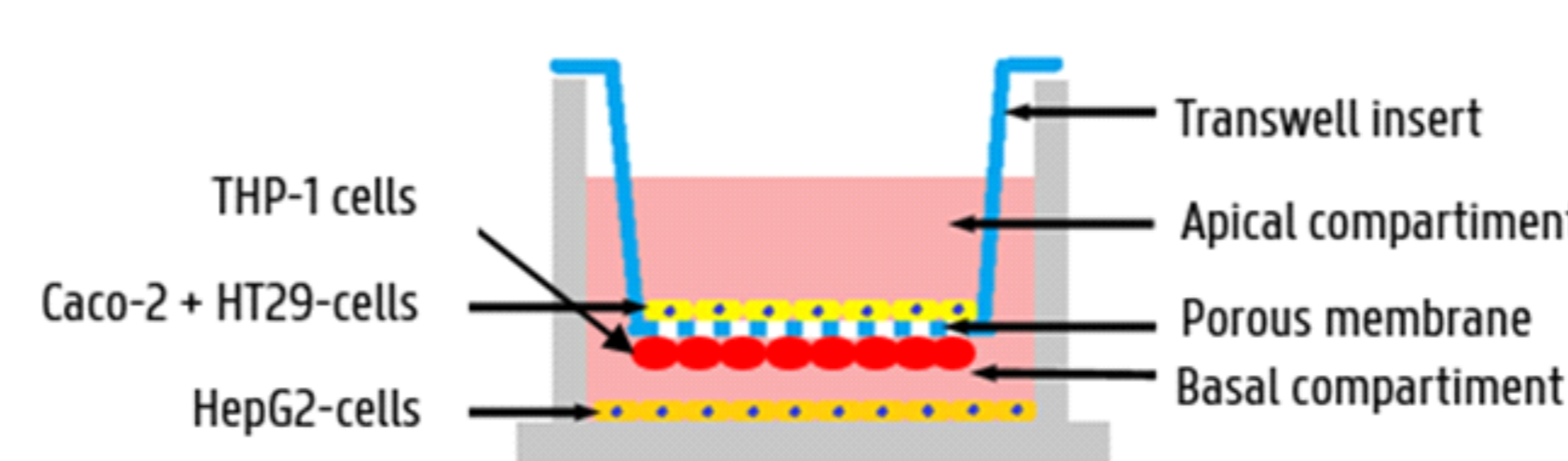
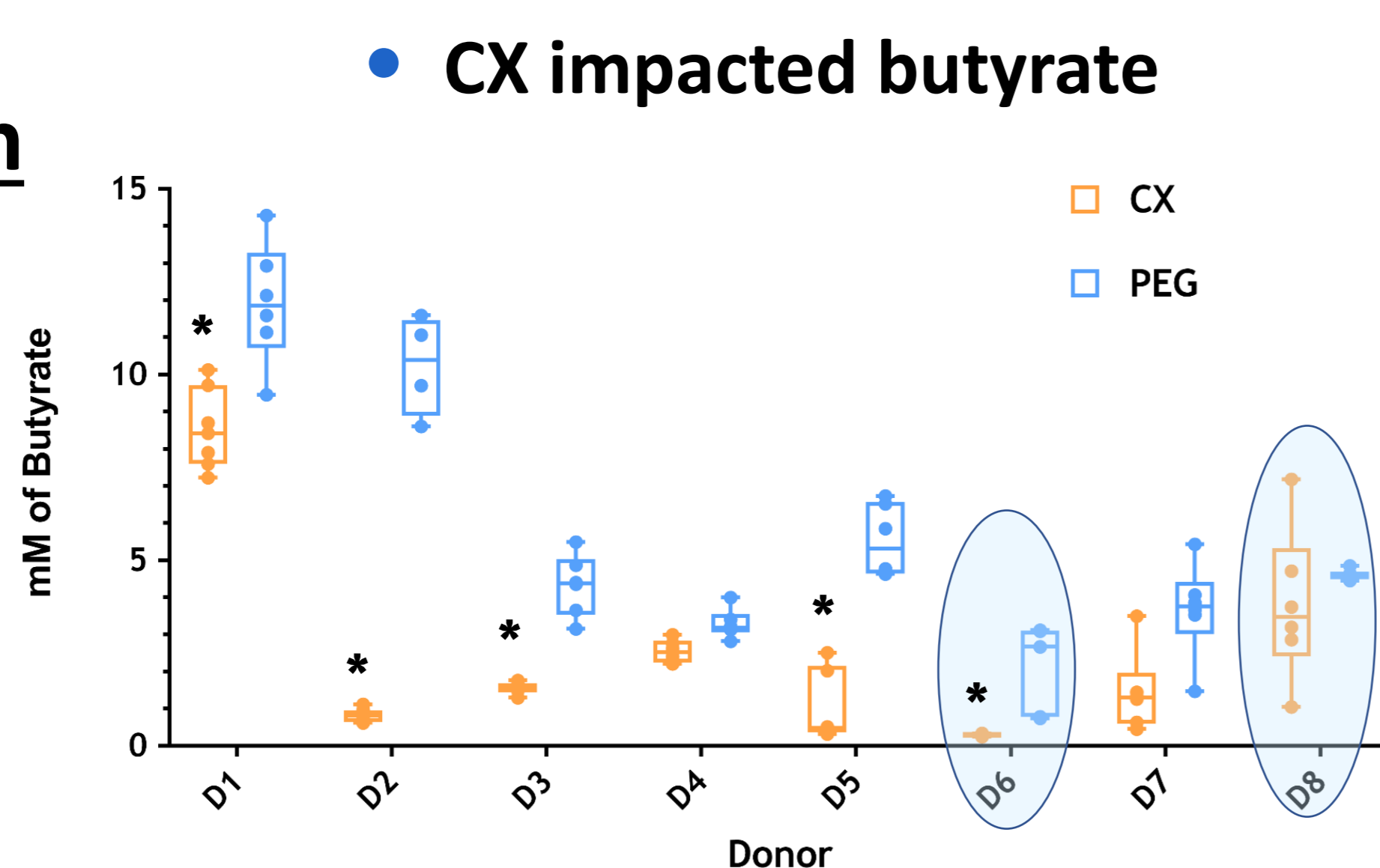


### Approaches

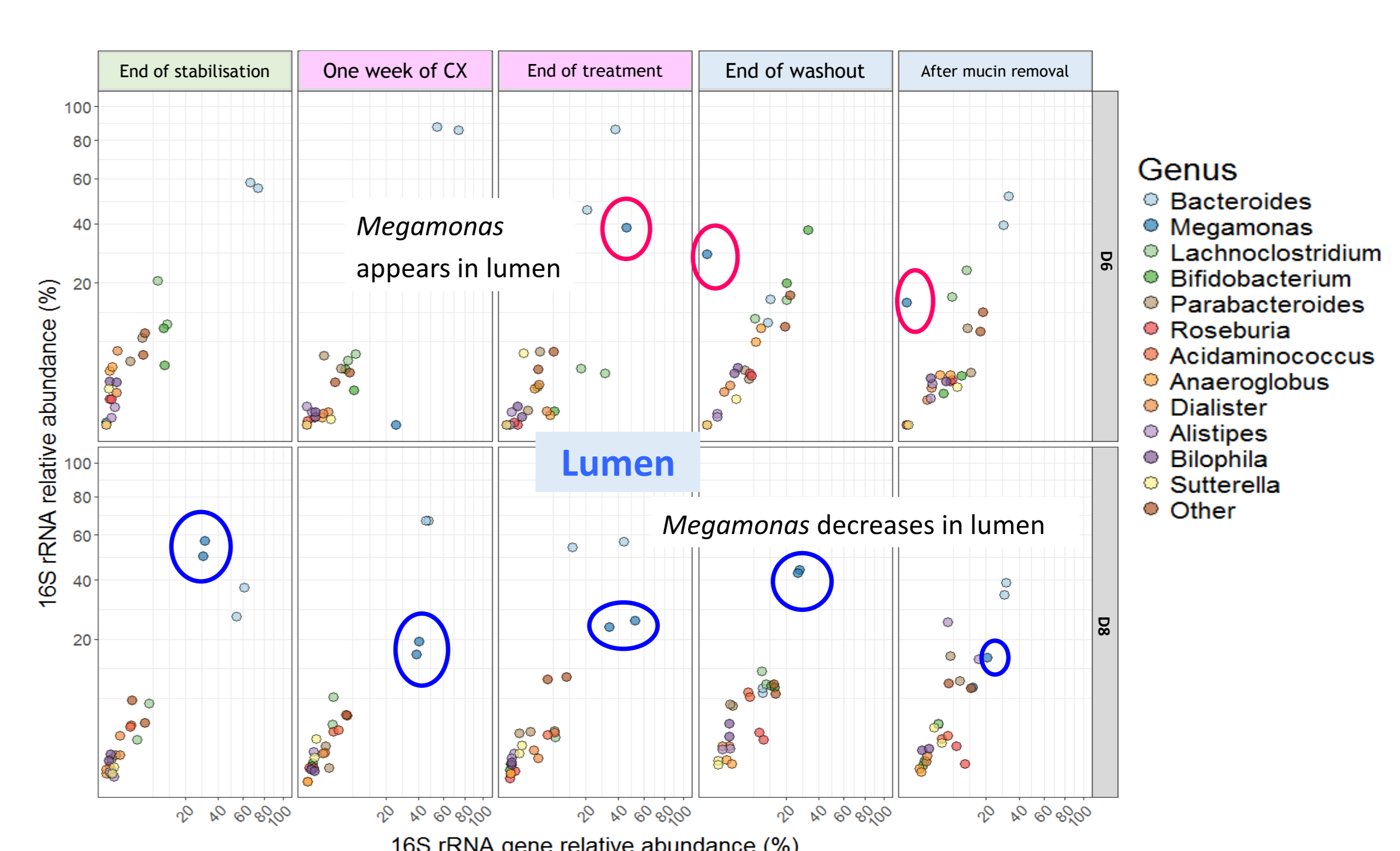
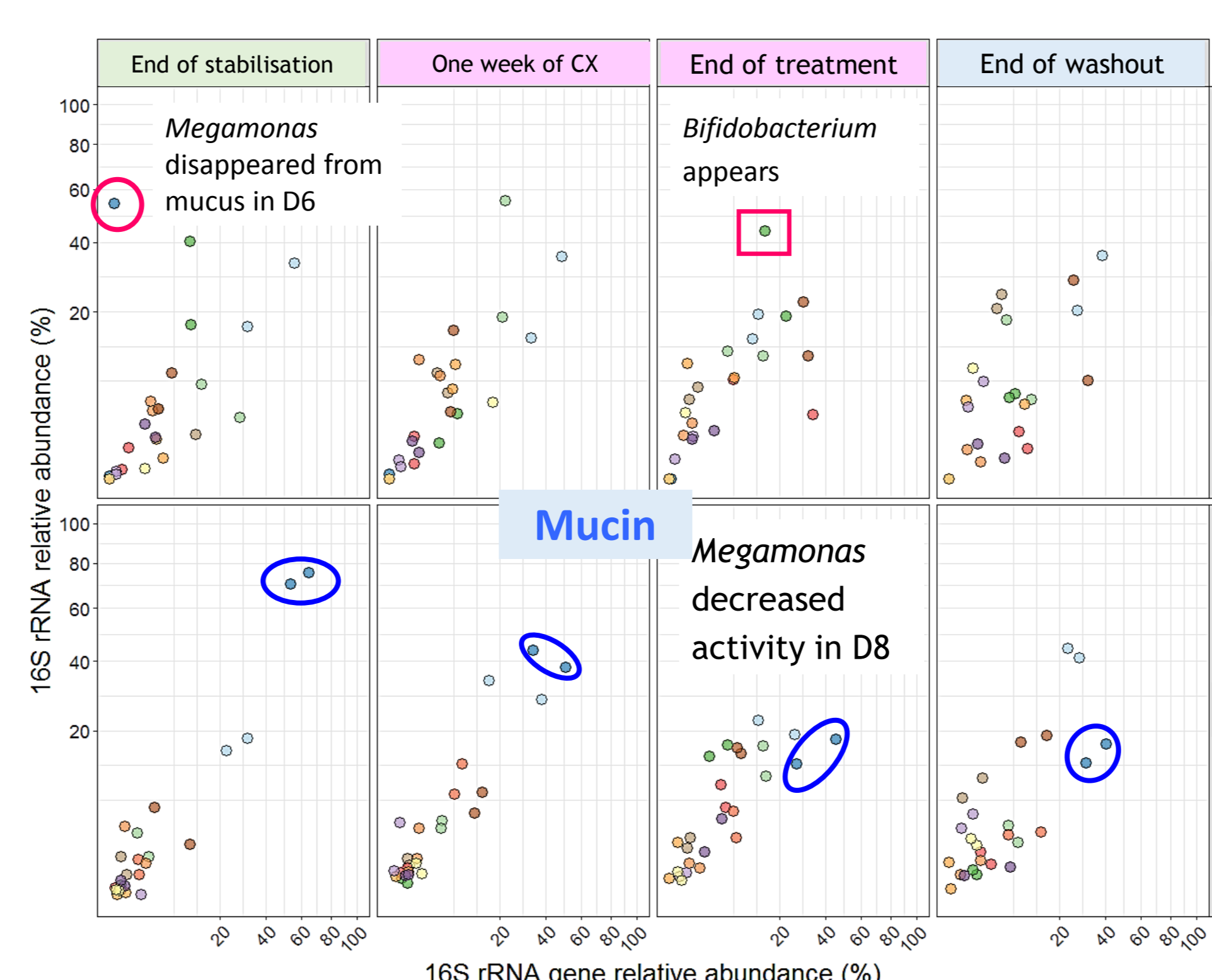
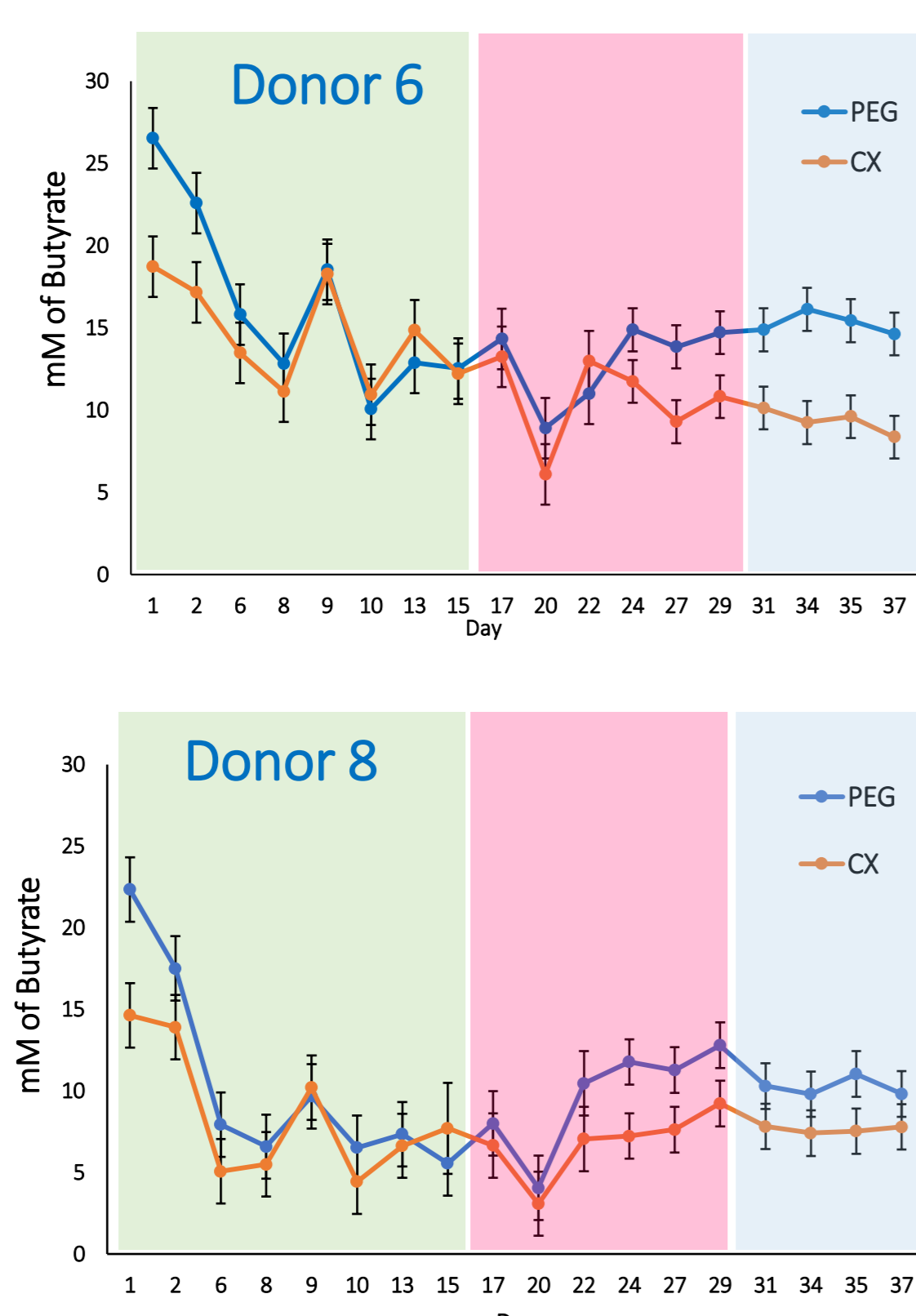
- Microbiome functionality (GC)
- Community composition (NGS)
- Host interactions (cell models)

## Interactions between microbial- and host-derived metabolism

### Short term



### Long term



• Butyrate follows same trend observed in the batch

• CX impacts bacterial protein synthesis activity in mucus

• CX triggers translocation of *Megamonas* from mucin to lumen compartment