Biomodels
FAST. INNOVATIVE. PREDICTIVE.

CUSTOMIZED PRECLINICAL SERVICES

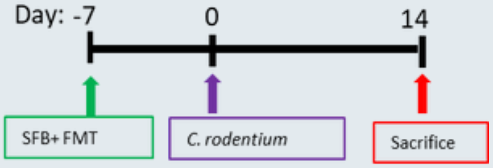
Biomodels LLC, an AAALAC accredited preclinical CRO, has spent the last 25+ years developing and executing predictive and highly translational efficacy studies for biotechnology and pharmaceutical companies.

PATHOGEN-INDUCED COLITIS

C. rodentium-Induced Colitis

The intestinal microbiome plays an important role in host immune homeostasis, including protection against opportunistic pathogens (1-4). SFB colonized mice are resistant to Citrobacter rodentium infection (4). SFB- animals are infected with C. rodentium on Day 0 and are evaluated daily for survival, body weight, and presence/absence of diarrhea and/or blood in stool. Bacterial colonization is monitored by culture of collected feces on restrictive agar. If desired, SFB- status of animals can be confirmed prior to infection, and animals can be reconstituted with a SFB-containing microbiome via FMT.

- **Duration:**
  - 14 days
- **Study Endpoints:**
  - survival
  - body weight change
  - diarrhea and/or blood in stool incidence
  - colon weight: length ratio
  - fecal C. rodentium load (CFU)
  - peripheral organ C. rodentium load (CFU)
  - fecal SFB gene expression

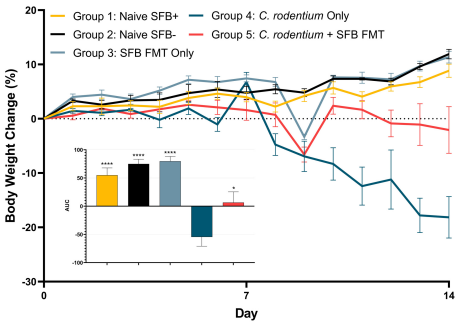


Have a preclinical project in mind?

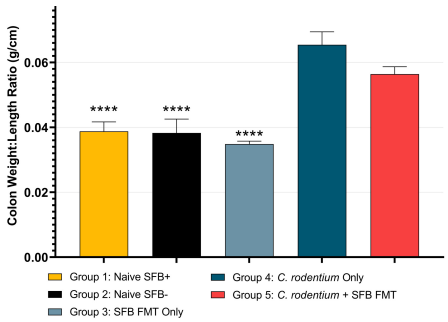
Schedule a call with Caitlin Parello, Ph.D., the scientist on our team who leads our Colitis studies!

Click here to submit your request.

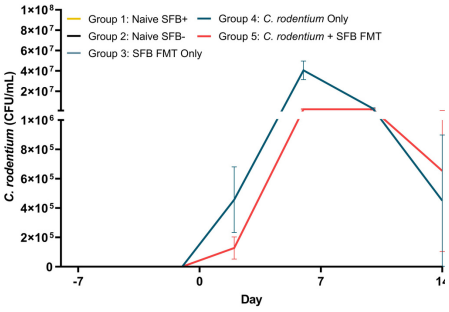
BODY WEIGHT CHANGE



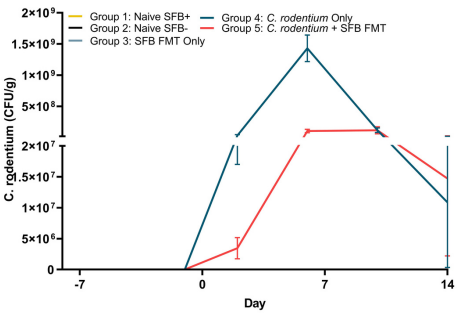
COLON WEIGHT: LENGTH RATIO



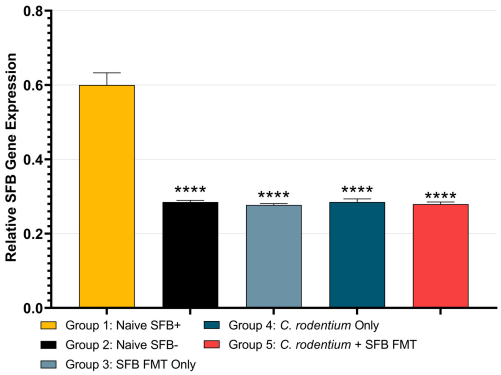
FECAL CFU/ML



FECAL CFU/G

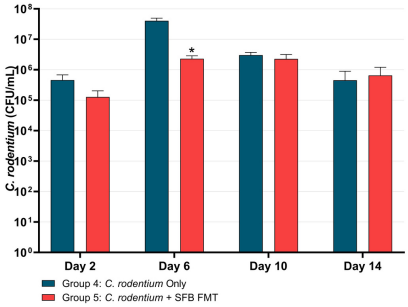


RELATIVE SFB GENE EXPRESSION

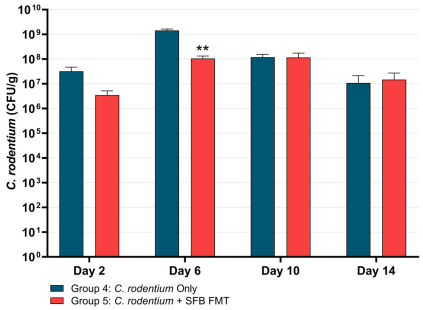


C. RODENTIUM GROUPS ONLY

Fecal CFU/mL - *C. rodentium* Groups Only



Fecal CFU/g - *C. rodentium* Groups Only



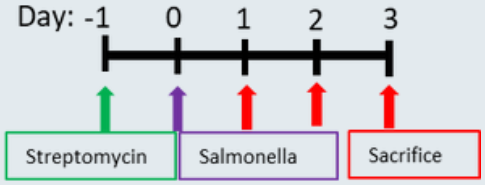
references: 1)Ivanov, et al 2) Backhed, et al 3) Macpherson, et al 4) Rackoff-Nahoum, et al

PATHOGEN-INDUCED COLITIS (CONTINUED)

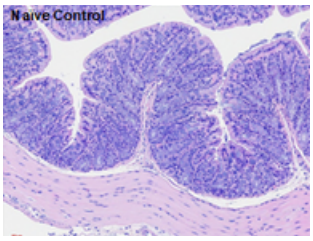
Salmonella-Induced Colitis

Mice are infected with S. typhimurium following streptomycin pretreatment and are evaluated daily for survival and body weight. Neutrophil GI infiltration can be monitored by MPO ELISA of collected feces.

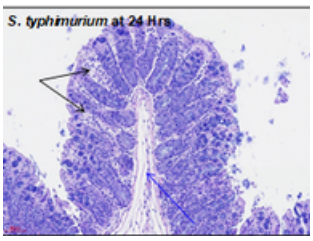
- **Duration:**
  - 3-6 days
- **Study Endpoints:**
  - survival
  - body weight loss
  - cecum photographs
  - fecal MPO
  - colon inflammation



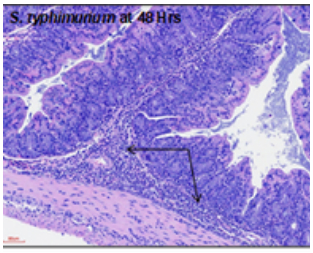
COLON HISTOPATHOLOGY - H&E



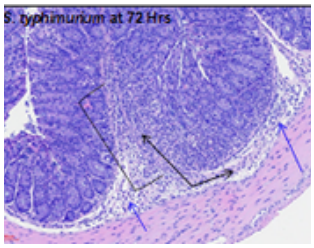
Naive



S. typhimurium at 24 Hrs

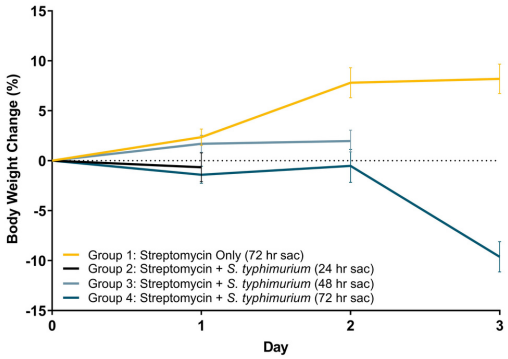


S. typhimurium at 48 Hrs

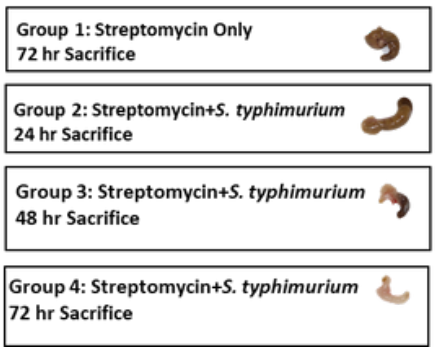


S. typhimurium at 72 Hrs

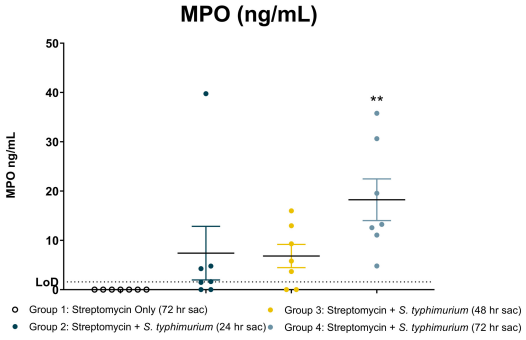
BODY WEIGHT CHANGE



INFLAMMATORY CECUM PHENOTYPE



COLON MYELOPEROXIDASE



2022 EVENTS

- **Microbiome Movement Drug Development |** June 21-23, 2022 | Boston, MA
- **Anti-Fibrotic Drug Development (AFDD) |** November 2022 | Boston, MA

AREAS OF EXPERTISE

Translational Disease Models

Cancer Supportive Care | Inflammatory & Autoimmune Diseases | Oncology | Radiation Countermeasures | Metabolic Disease | Fibrosis | Microbiology & Infectious Disease | Pulmonary Disease | Cardiovascular | Neurological & Psychological Disorders | Pharmacology

FAST. INNOVATIVE. PREDICTIVE.

Core to Biomodels mission is to deliver quick turnaround times, personalized service, customized solutions and highly translational models of human disease. Our 25+ years of experience and growing expertise has facilitated 50+ compounds into patients for multiple indications.