IBD Models

Diverse in vivo models to progress IBD drug development

Translate your IBD therapeutics to the clinic with our preclinical drug development platform. Utilize validated in vivo models to understand the efficacy of your Crohn’s disease and ulcerative colitis agents.

- Select preclinical models with diverse mechanisms capturing many of the key characteristic clinical and pathologic features of IBD including:
  - gut epithelial/barrier defect model
  - innate and regulatory cell mediated model.
- Determine efficacy and response to treatment.
- Select qualified Crohn’s disease and ulcerative colitis lead agents.

Gut epithelia/barrier defect mouse model – DSS-induced colitis

- Mice are given DSS in their drinking water for 7 days, followed by several days of tap water, which induces a Th2 UC-like inflammation in the colon.
- Major endpoints:
  - bloody stool/diarrhea
  - weight loss
  - colon weight/length
  - Disease Activity Index
  - mucosal integrity.
- Histopathological assessment:
  - Board Certified Veterinary Pathologist.

Innate and regulatory cell mediated mouse model – T cell transfer

- CD4+CD45RBhi cells are isolated from spleens of BALB/c mice and transferred into SCID recipients.
- Clinical disease develops from 3 weeks post-transfer, and peaks at 5-6 weeks.
- Major endpoints:
  - weight loss
  - diarrhea
  - colon weight/length
  - Disease Activity Index
  - mucosal integrity.
- Histopathological assessment:
  - Board Certified Veterinary Pathologist.

DSS-Induced Colitis Mouse Model

Representative Colon Histology Photomicrographs

Panel A represents normal non-lesional colon architecture with pertinent structures indicated as mucosa (M), muscularis mucosae (MM), and tunica muscularis externa (TME).

Panel B represents disrupted colon architecture highlighted by inflammatory cell infiltrates (I) into the mucosa (M), submucosa (SM), and tunica muscularis externa (TME), and colonic gland loss (*) and erosion (demarcated by black arrows) induced by DSS in the drinking water.

Panel C shows largely normal colon architecture with a small site of inflammation and gland loss (*) in response to cyclosporine A treatment in DSS model.

T Cell Transfer Mouse Model

% Body Weight From Day 21

Time (days)