

# Inflammatory Bowel Disease

## Immunology and Inflammatory Disease

Ulcerative colitis and Crohn's disease are a set of chronic, idiopathic, immunological and relapsing inflammatory disorders of the gastrointestinal tract referred to as inflammatory bowel disease (IBD). Various chemical-induced colitis models are widely used on laboratory scale, and these models closely mimic morphological, histopathological and symptomatic features of human IBD. Among the chemical-induced colitis models, trinitrobenzene sulfonic acid (TNBS)-induced colitis, oxazolone induced-colitis and dextran sulphate sodium (DSS)-induced colitis models are most widely used. TNBS elicits Th-1 driven immune response, whereas oxazolone predominantly exhibits immune response of Th-2 phenotype. However, the DSS-induced colitis model induces changes in both Th-1 and Th-2 cytokine profile.

The presented validation data are from the efficacy studies in DSS induced IBD mouse/rat.

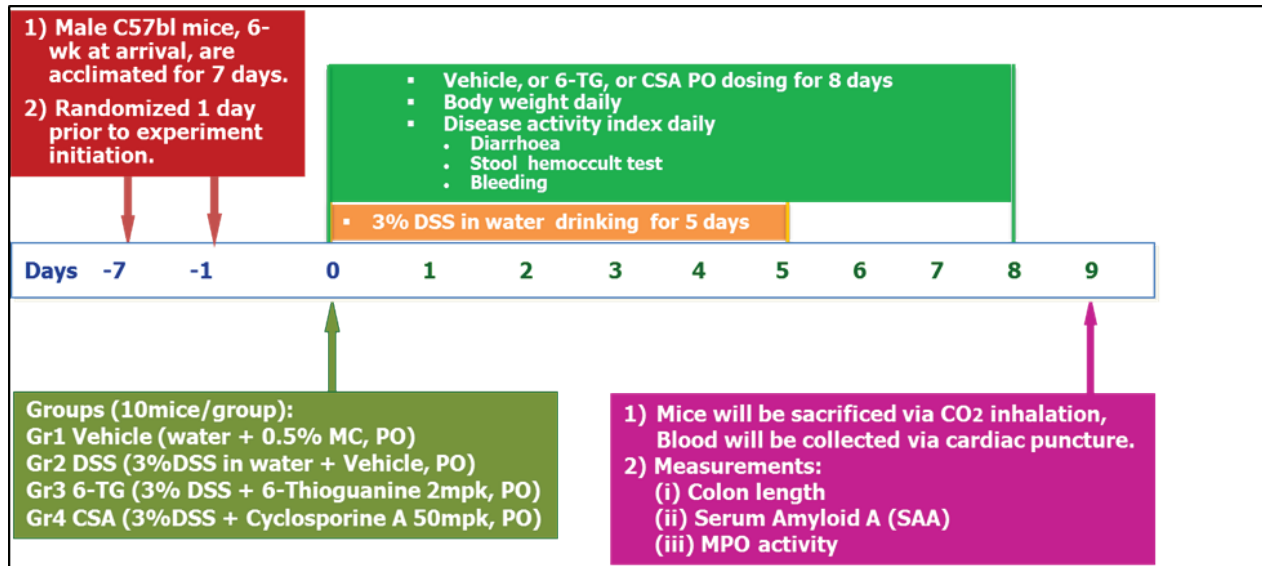
### Models Available:

- DSS-Induced IBD in Mice
- DSS-Induced IBD in Rat



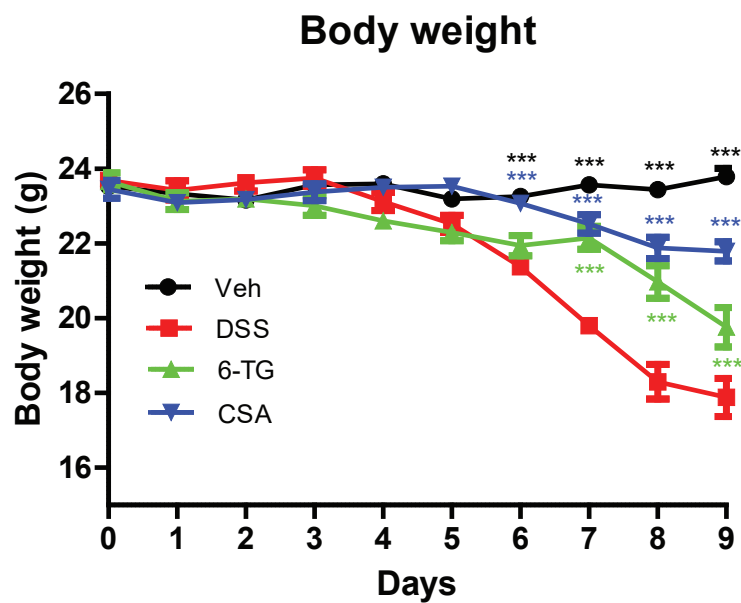
**Validation Data:** DSS-induced Intestinal Bowel Disease (IBD) in Mice

Study Protocol



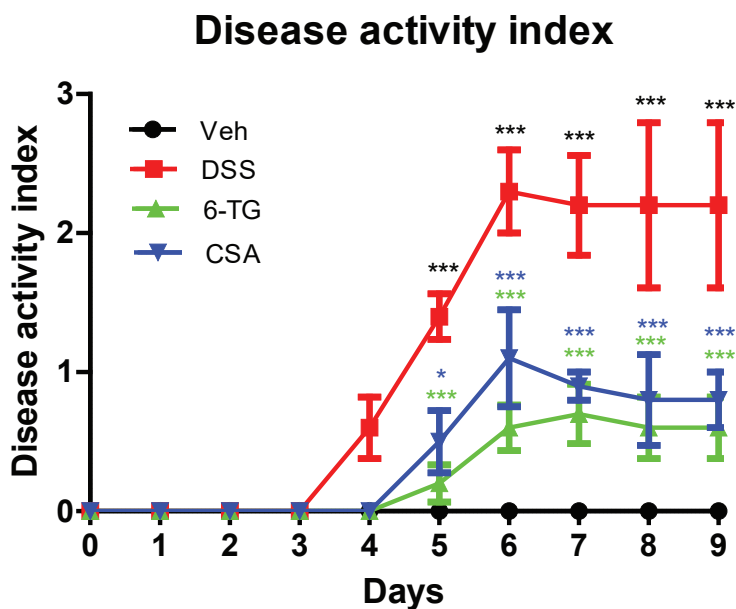
Results

i. Changes in body weight



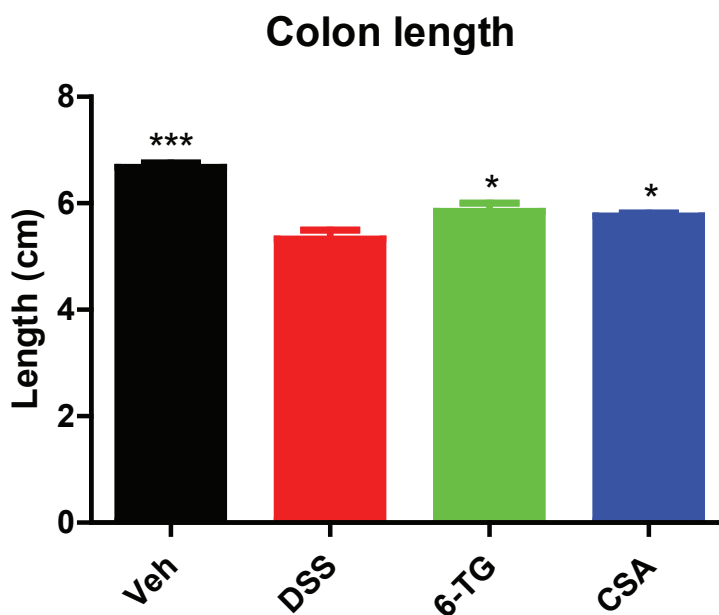
Two-way ANOVA, Bonferroni's posttests,  
 \*\*\* p < 0.001 vs. DSS

ii. Disease activity index



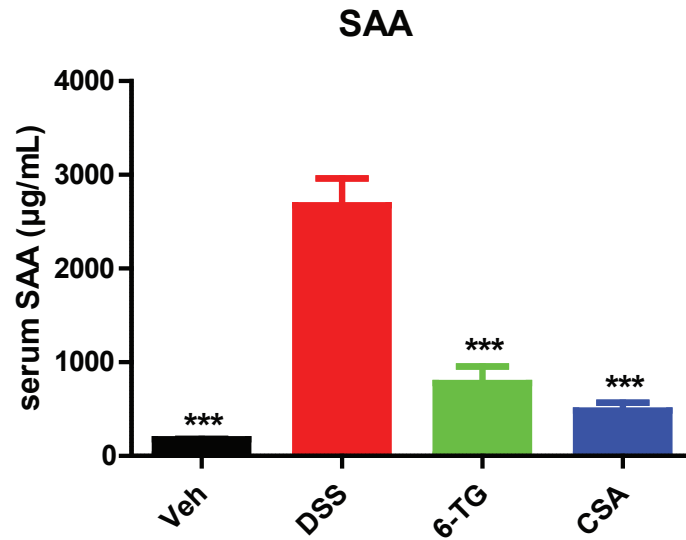
Two-way ANOVA, Bonferroni's posttests,  
 \* p < 0.05, \*\*\* p < 0.001 vs. DSS

iii. Colon length



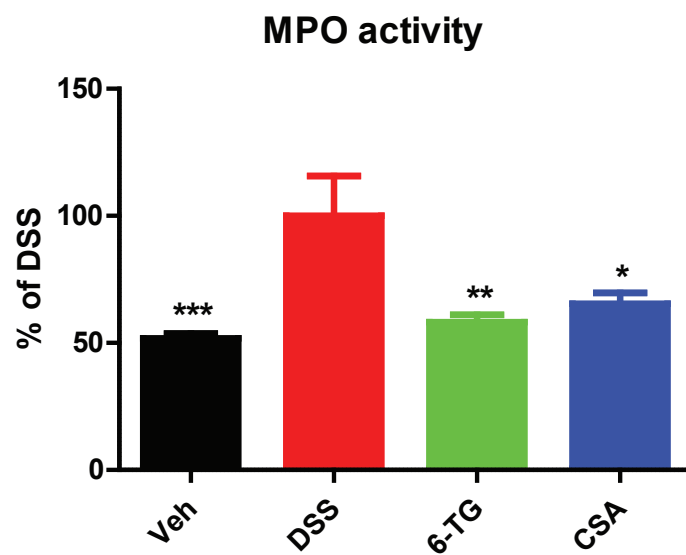
One-way ANOVA, Dunnett's multiple comparison test,  
 \* p < 0.05, \*\*\* p < 0.001 vs. DSS

iv. Serum SAA levels



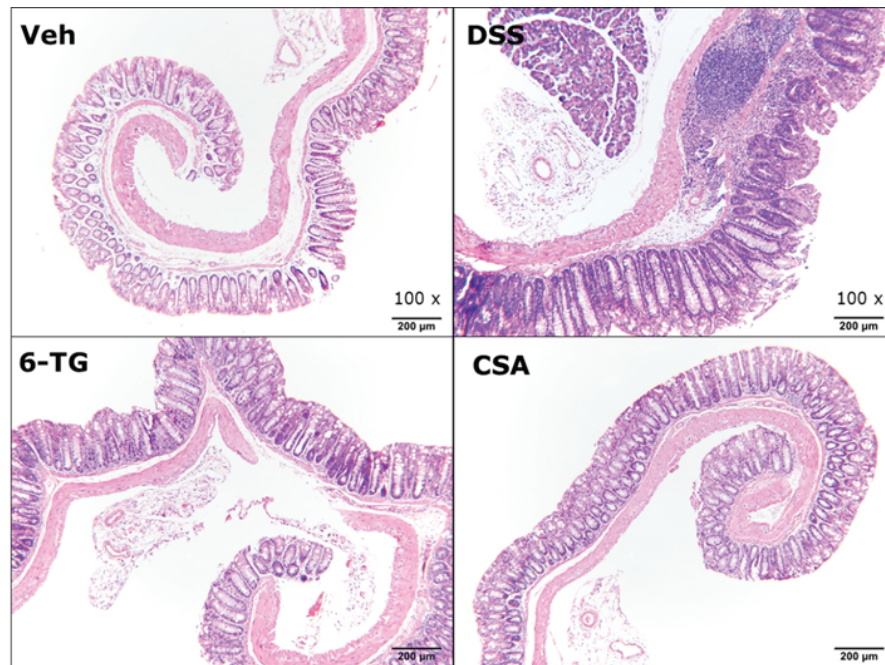
One-way ANOVA, Dunnett's multiple comparison test,  
\*\*\* p < 0.001 vs. DSS

v. MPO activity

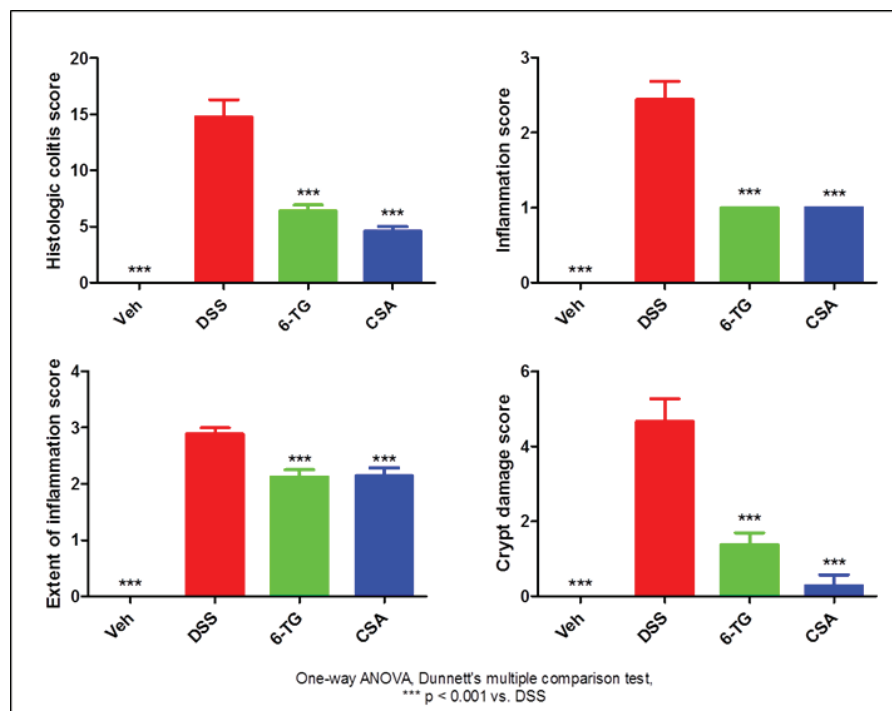


One-way ANOVA, Dunnett's multiple comparison test,  
\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001 vs. DSS

vi. Distal colon histology HE staining

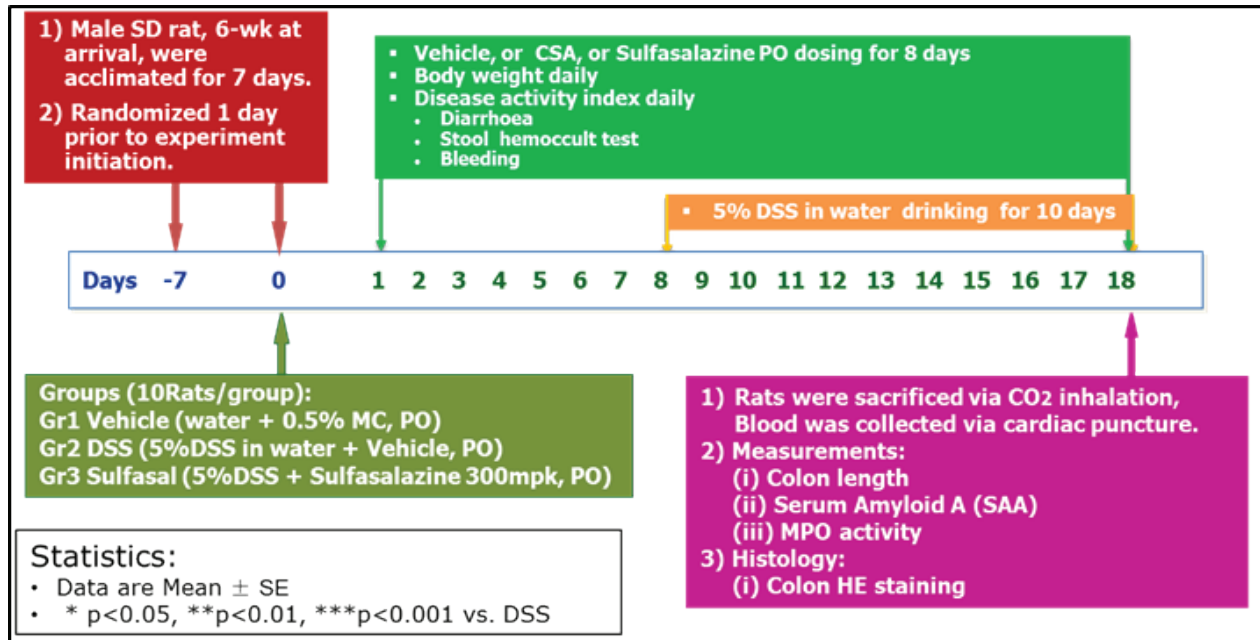


vii. Histologic grading in DSS-induced IBD in Mice



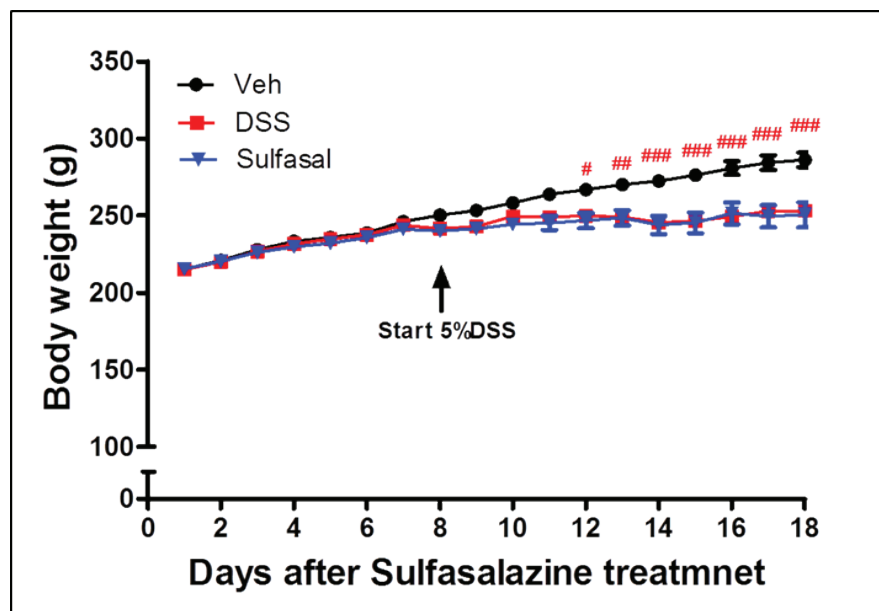
**Validation Data:** DSS-induced Intestinal Bowel Disease (IBD) in Rats

Study Protocol



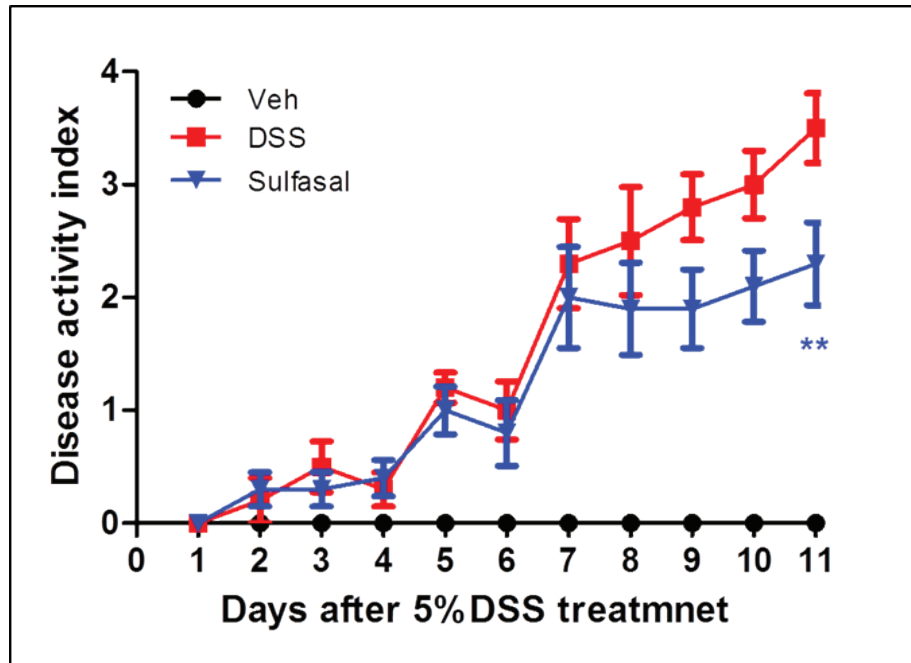
Results

i. Changes in body weight

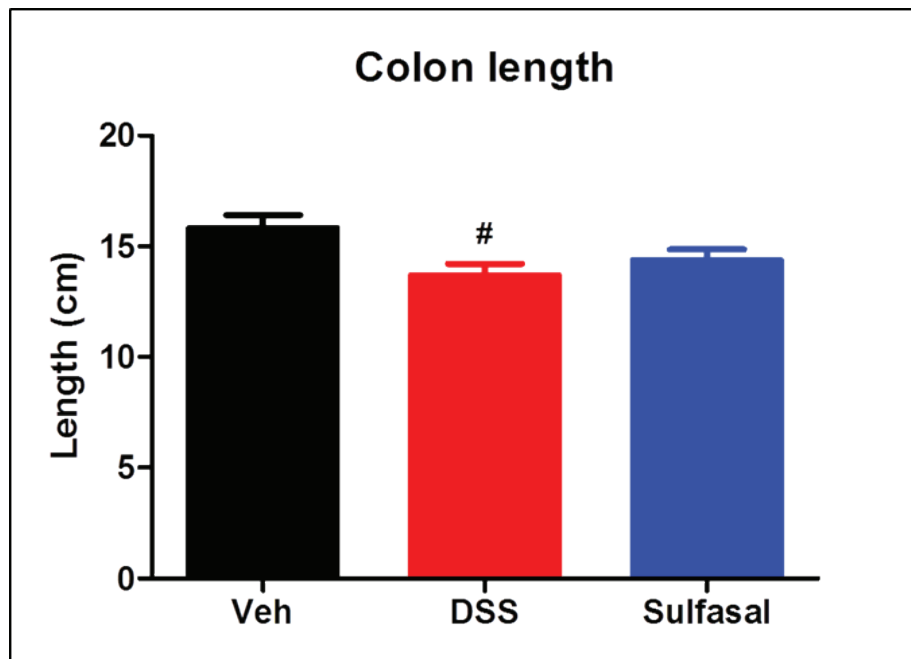


One-way ANOVA, #p<0.05, ##p<0.01, ###p<0.001 Veh vs. DSS

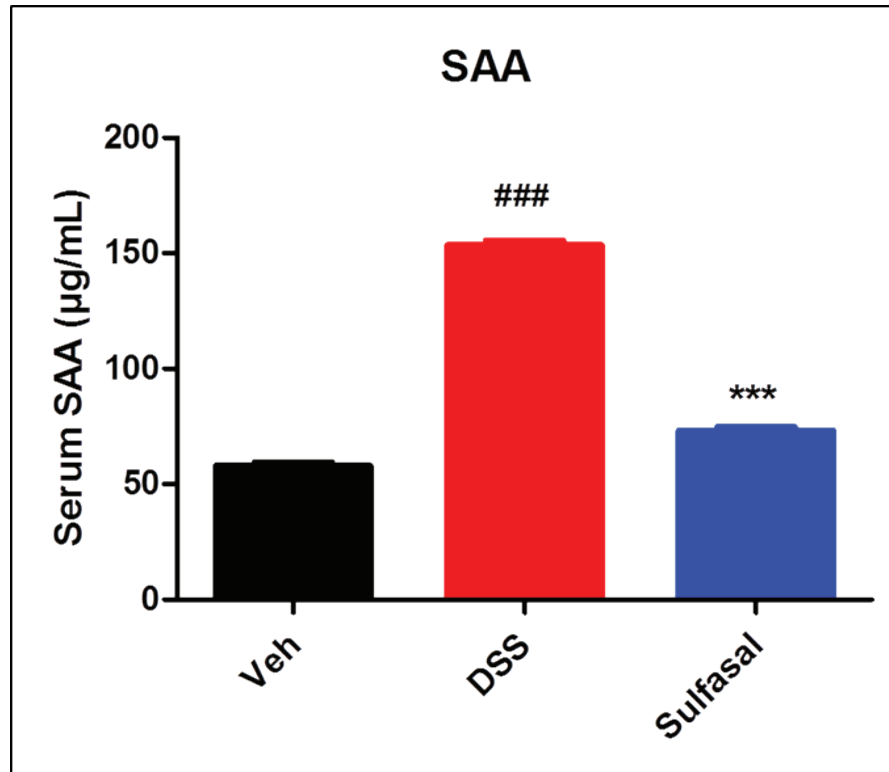
ii. Disease activity index



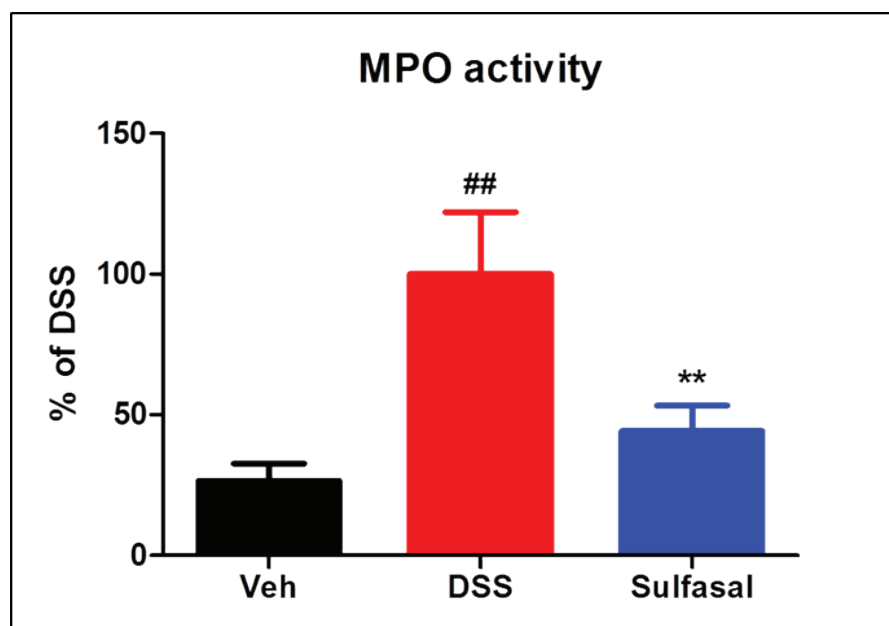
iii. Colon length



iv. Serum amyloid A (SAA) levels

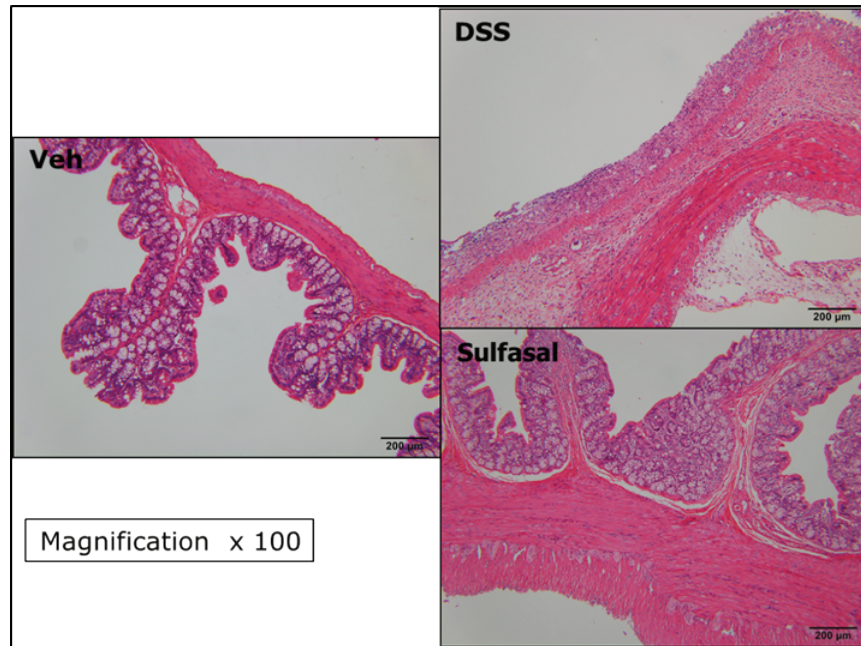


v. MPO activity

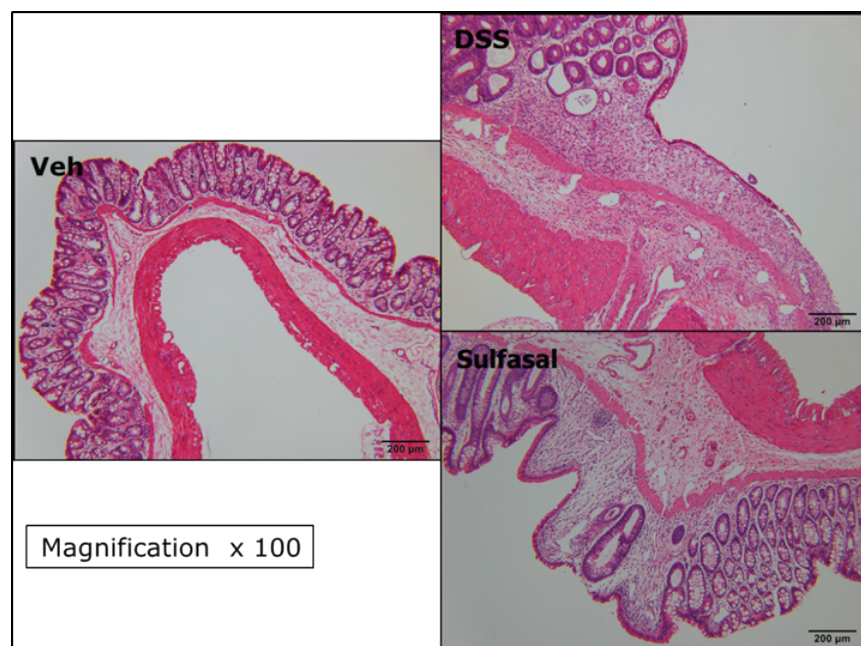




vi. Proximal colon histology HE staining



vii. Distal colon histology HE staining



# BioDuro Pharmacology

## The BioDuro Advantage

BioDuro's pharmacology team has extensive drug discovery and development experience in the pharmaceutical industry enabling us to support fully integrated programs, including study design and data interpretation. Special expertise in metabolic and inflammatory diseases is coupled with a commitment to working with clients to develop customized models for rare diseases.

Our team has successfully collaborated with 9 of the top 20 large pharmaceutical companies and numerous small companies. The success of these collaborations is highlighted by the quality data provided that have informed key project decisions and regulatory filings. Beyond providing analysis, our senior team's expertise allows for the development of a consulting relationship with client partners.

## Services

- Translational research
- Biomarker discovery & development
- Compound efficacy evaluation
- Consultation

## The Pharmacology Team

- **Dr. Yong Qi**, Directory of Pharmacology, has over 16 years of experience in leading and advancing drug discovery projects in metabolic and other disease areas at several pharmaceutical companies, including GlaxoSmithKline
- Group leader-level scientists with strong background and training in metabolic diseases
- A team of 20 well-trained bench scientists focused on in vitro and in vivo metabolic disease drug discovery services. They are skilled in different animal models/assays and excel in problem-solving and trouble-shooting

## Therapeutic Focus

- CNS
- Inflammation and Immunology Disease
- Metabolic Disease