

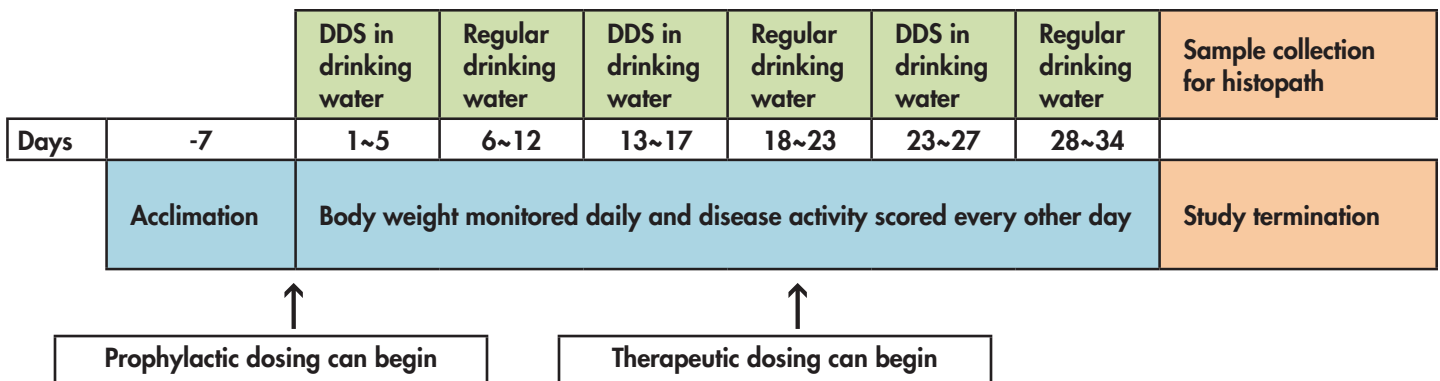
Chronic Mouse Model of Inflammatory Bowel Disease Induced by Dextran Sulfate Sodium

Human inflammatory bowel disease (IBD) is a chronic, relapsing and remitting inflammatory condition characterized by two overlapping phenotypes — ulcerative colitis (UC) and Crohn's disease (CD). The dextran sulfate sodium (DSS) colitis model is one of the most frequently used rodent IBD models. Mice that are exposed to DSS in drinking water will develop an inflammation of the colon, displaying symptoms such as diarrhea, rectal bleeding, and weight loss. Acute colitis can be induced by single cycle of DSS exposure to the mice whereas multiple cycles of DSS administration will lead to chronic colitis (Okayasu, *et al.* 1990). This Sample Study describes a protocol designed to evaluate the efficacy of novel therapeutic compounds in the context of chronic DSS induced colitis in mice.

Study Design

- Eight-week old C57BL/6J (stock number 000664) male mice
- Three cycles of DSS in drinking water *ad libitum*
- Body weight monitoring
- Disease activity index scoring
- Tissue (colon) preparation for histopathological analysis

Experimental Timeline



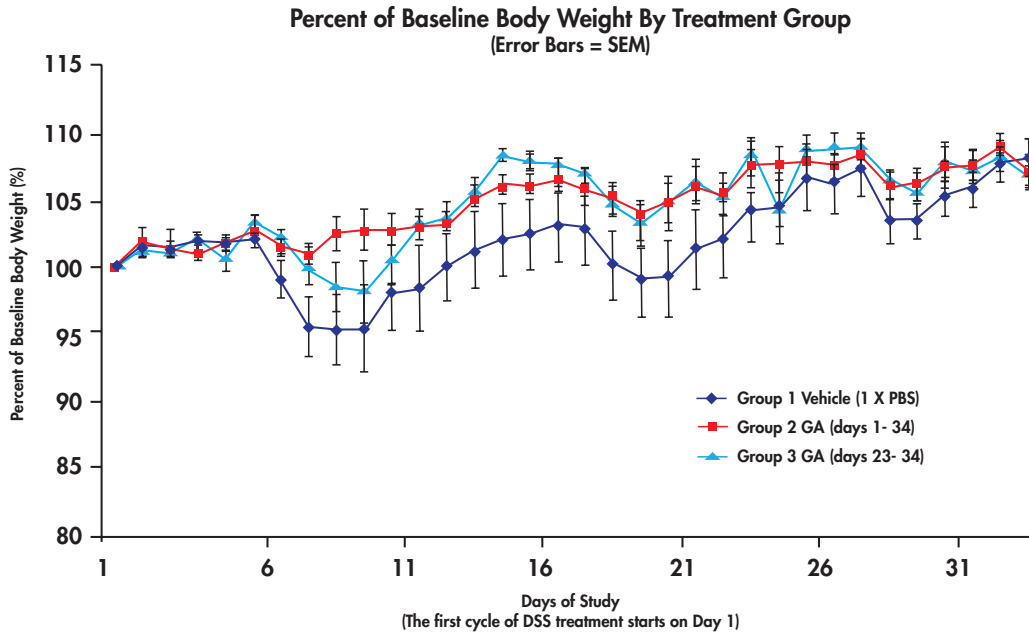
Deliverables

1. Blood (serum or plasma)
2. Histology blocks and slides
3. Written report providing the following information:
 - Body weight changes
 - Clinical Scoring of IBD symptom severity
 - Colon Lengths and Weights
 - Histopathology scoring of colons

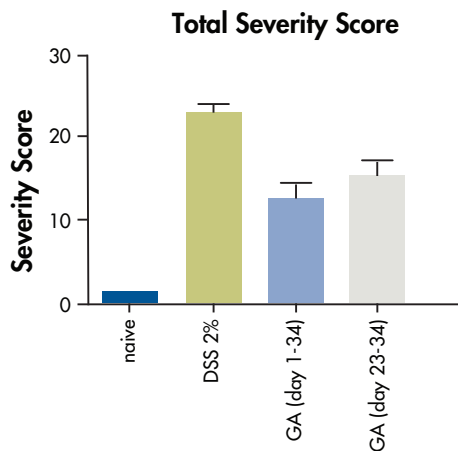
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Email: jaxservices@jax.org
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Representative data



Glatiramer acetate (GA) as the reference compound.



Histological grading of colitis:

Total severity was calculated by summing the scores for inflammation, glandular epithelial loss and erosion from proximal, medial and distal segments of colons.

Conclusions

1. Three cycles of 2% DSS administration results in reliable induction of IBD characterized by loss of body weight, increased colon weight and chronic intestinal inflammation.
2. Prophylactic and therapeutic administration of Glatiramer acetate is effective in improving the disease phenotype.

Reference

Okayasu I, *et al.* 1990. A novel method in the induction of reliable experimental acute and chronic ulcerative colitis in mice. *Gastroenterology* 98:694-702.

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