Introduction

Dextran sulfate sodium (DSS)-induced colitis mouse model is commonly used to study the pathology of inflammatory bowel disease (IBD), but disease severity may be influenced by gut microbiota composition. We aim to determine whether differences in DSS-induced colitis severity exist between mice from different facilities, and different rooms in the same facility, and whether gut microbiota is involved in this process.

Methods

Three groups of seven-week old male C57BL/6 mice from Charles River Laboratory (CRL) and four groups bred in-house at the BCCHR animal facility (three groups from Room 1, one from Room 2) were given 3% DSS in drinking water for five days and monitored for seven days following DSS. Stool samples were collected at day 0 and day 5 and analyzed using the QX200â"“ Droplet Digitalâ“¢ PCR System for gut microbiota differences. Body weight and disease activity scores were recorded each day.

Results

Groups 5 and 6 from Room 1 had the highest susceptibility to DSS and Group 3 from CRL showed the lowest susceptibility. Group 3 had significantly higher (p<0.05) post-DSS total bacteria concentrations than all other groups. Groups 4, 5 and 6 had lower Bacteroides concentrations at baseline, and Groups 4 and 6 showed a significant increase in Bacteroides following DSS.

Conclusion

Significant differences in DSS-induced colitis severity were demonstrated between different facilities and rooms. Groups of mice with higher Bacteroides concentrations experienced higher disease susceptibility whereas groups with higher total bacteria experienced lower disease susceptibility following DSS. Why is this important?

Themes:

Check (highlight) the most applicable theme according to the abstract.

- Innovation and Technology
- Health and Wellness
- Culture and Society
- Sustainability and Conservation

Comments:

- Leading with a global statement about why this research is important would be useful and would feed in to your conclusions.
- After DSS was removed or during DSS treatment + 2 days after.
- You have not defined day 0 so this does not help explain the expt. During DSS treatment or after?
- Some funny formatting changes seemed to occur – I am sure that this is not the name of the system.
- You have not defined your groups previous so referring to group # does not help the reader. Perhaps you could just state your results. “DSS-induced colitis was significantly worse in BCCHR bred mice from a specific room whereas mice from CRL were protected.” BCCHR bred mice had lower Bacteroidetes at baseline, which increased in one of the two groups with increased susceptibility to colitis as well as another group.
- This does not seem to be true based on the results you presented ???
- While is for time, whereas is for contrast.