

How do you prepare DSS solution for inducing colitis in animal models?

Prepare DSS solution with sterile water and refer to our application guide for detailed w/v concentration. 0.22 µm filtration is always recommended prior to use.

What are the critical parameters for successfully inducing colitis in animal models?

The molecular weight of DSS, concentration of DSS solution, type and strains of animals and type of diets provided to the animals.

What is the administration route of DSS solution?

DSS solution can be administered by oral intake, such as drinking freely or intragastric administration.

Any conditions we need to pay attention to when inducing colitis animal models?

1. Prepare DSS solution with sterile water and refer to our application guide for detailed w/v concentration. 0.22 µm filtration is always recommended prior to use.
2. Change with freshly prepared DSS solution every 1-2 days.
3. In order to clearly observe model development, adequate housing needs to be provided; 2-3 per cage is recommended and no more than 5 per cage at maximum.
4. Maintain consistent habitat conditions across all animals.

What would be the estimated volume of water consumption for mouse and rat?

7-10 mL per day for mouse and 11 mL per day per 100 g bodyweight for rat.

Does the molecular weight affect the results of colitis model creation?

Yes. 36,000-50,000 is the best molecular range of DSS for colitis model creation. Low molecular weight DSS has a weaker inflammatory effect and will be difficult to be absorbed if the molecular weight is higher.

Why do I need to use a different concentration of DSS solution every time I receive a new lot of DSS?

DSS is a polymer, and the range of molecular weight is only indicating an average value. Molecular weight varies from lot to lot, but within the optimum range. We recommend purchasing enough of the same lot of DSS to cover your entire experimental project. If this is not feasible, we recommend performing a pre-test prior to switching lots.

Why are there no significant symptoms observed after administering 3% DSS to mice after 3 days?

Each individual animal has a different level of tolerance to DSS. Noticeable bodyweight decreases can be observed as late as 5 days after DSS administration. If 7 days of DSS administration has not resulted in any changes, please increase the DSS concentration or contact MP Biomedicals.

Is intestinal bleeding common after creating a colitis animal model?

High concentration DSS solution can cause intestinal bleeding; this is normal if the bleeding is at a controllable scale. Lower DSS concentrations can significantly relieve the bleeding.

Bodyweight decreases significantly, but little or only mild pathological symptoms show according to H&E staining.

Bodyweight dropping is only indicating DSS is taking effect, but cannot be considered as the sign of establishment of the model. Pathological symptoms will be revealed only when DSS intake reaches a certain level.

Why is phase 2 induction of chronic colitis always slower than phase 1, even with the same concentration of DSS?

DSS tolerance level will be increased after phase 1 induction, slower or milder symptom built-up is common. Increase DSS concentration accordingly can resolve the issue.

Can DSS be used on zebrafish for colitis model creation?

Yes.

What is the difference between colitis models created by DSS and TNBS?

DSS induces ulcerative colitis, while TNBS induces Crohn's disease.

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