

Mouse Harvest Handout

Name:

Date:

The most important ground rule is: **No goofing around with mice or during this lab.**

Goals of the lab:

A. Learn where the organs of the immune system are located in a mouse and what the organs look like in real life.

B. Determine if there are visible effects of *RAG*-deficiency (*RAG KO*) on the immune system. (*RAG* is the recombinase activating gene. It is required for the generation of T and B cells).

State your hypothesis concerning the effects on the organs of the immune system if a mouse lacks functional *RAG*:

C. Compare the organs of the immune system between mice that are *RAG wild-type* and *RAG-KO*. Locate and sketch the main organs of the immune system (Spleen, Lymph nodes, Bone Marrow, Thymus).

Why do you think the spleen is red?

Why do you think the bone marrow is red?

C1. Measure the size of the spleen of your WT mouse (width, thickness, length in centimeters). Record your data here and in the chart.

C2. Measure the size of the spleen of a *RAG-KO* mouse (width, thickness, length in centimeters). Record your data here and in the chart.

WT Mice	Sp length	Sp width	Sp thickness		RAG KO Mice	Sp length	Sp width	Sp thickness
1					1			
2					2			
3					3			
4					4			
5					5			

C3. Was your hypothesis correct (part B)?

- Immature B cells: bone marrow (long bones like legs).

- Mature B cells: spleen (B) and lymph nodes (LN) (All the numbers EXCEPT 3).

- T cells develop in the thymus (3).

- T cells: LN & Spleen.

