

# Immunological Characterization of the Peritoneal Cavity of the TLR5 Knockout Mouse

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## *Introduction*

- Toll-like receptor 5 (TLR5) is a molecule associated with the immune system
- TLR5 detects tails of bacteria
- Previous research focuses on organized lymphoid tissue
- Function in Peritoneal Cavity (PerC) not established
- Goal: Characterize the immune system (PerC and Spleen cells) of TLR5 knockout mice compared to wildtype mice

## *Methods*

- C57BL/6J wildtype mice and TLR5 KO mice purchased from Jackson Laboratory
- Flow cytometric analyses performed on the PerC and spleen to characterize the different immune system cells (T vs. B cells)
  - Fluorescence tagged antibodies specific to subset identifiers of T and B cells
- Averages of wildtype (n=15) and TLR5 KO (n=14) compared by T-tests to determine statistical significance

## *Results*

- Differences seen in the Spleen B and T cells and the PerC T cells
- PerC B cells had no differences, TLR5 KO immunobiology looked similar to WT
- Seemed to be more drastic differences in aging TLR5 KO mice

## *Discussion*

- Statistically significant differences seen between B and T cell profiles of the spleen and PerC of TLR5 KO mice compared to WT mice
- Future experimentation needed to investigate in-vivo and in-vitro immune responses
- Future experimentation place heavier emphasis on aging mice
- Allows for connections to be made between the immunological profiles described and immune responses seen
- Increasing differences with aging suggests TLR5 response important in maintaining a healthy, low inflammatory, low-fat immunobiology and has cancer implications