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Dendritic Cell Phagocytosis in C57BL/6 IL-10^{-/-} and C57BL/6 Wild Type Mice and Implications for Guillain-Barré Syndrome Pathology

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Poster Presentation P2

**DENDRITIC CELL PHAGOCYTOSIS IN C57BL/6 IL-10^{-/-} AND
C57BL/6 WILD TYPE MICE AND IMPLICATIONS FOR
GUILLAIN-BARRÉ SYNDROME PATHOLOGY**

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Guillain-Barré Syndrome (GBS) is a polyneuropathy affecting the peripheral nervous system, characterized by high anti-ganglioside autoantibodies and nerve lesions, that occurs after exposure to an infectious agent, such as the bacterium *Campylobacter jejuni* (*C. jejuni*). *C. jejuni* 11168 is capable of colonizing the gastrointestinal tracts of interleukin (IL)-10-deficient C57BL/6 mice and C57BL/6 wild type mice. We hypothesized that dendritic cells (DCs) from C57BL/6 IL-10^{-/-} mice have a greater ability to adequately phagocytize the bacteria for elimination in the context of the innate immune response and antigen presentation in an adaptive immune response. We tested this hypothesis by comparing the function of dendritic cells from C57BL/6 IL-10^{-/-} mice and C57BL/6 wild type mice when infected with *C. jejuni* (11168). Dendritic cells were obtained by treating harvested bone marrow stem cells with rmGM-CSF, a cytokine that causes the bone marrow cells to differentiate into dendritic cells. A gentamicin killing assay was then performed to determine the extent of bacterial internalization by the dendritic cells, an essential step for the innate immune response, antigen-presenting functionality, and T-cell and B-cell activation. Further studies will be needed to elucidate the mechanisms of how the immune system response to this bacterium results in the autoimmune reaction cause GBS pathology.

