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Abstract

“Mechanisms of arthritis resolution in Lyme disease”

Infection of C3H mice with the spirochete, *Borrelia burgdorferi*, results in the development of a transient inflammatory arthritis that peaks around 3 weeks post-infection and then spontaneously resolves over the next few weeks. My lab is interested in the regulatory mechanisms that drive both the development and resolution of this arthritis pathology and for the last few years have focused on the role of bioactive lipids in this response. Bioactive lipids consist of eicosanoids and specialized pro-resolving mediators (SPM) that are important mediators of inflammation. Previous work from our laboratory demonstrated that infection of C3H mice deficient in the enzyme 5-lipoxygenase (5-LOX) resulted in exacerbated arthritis and a failure of arthritis resolution. This was not due to a failure of the host response and clearance of spirochetes from the tissue, but appeared to result from a failure to clear apoptotic cells and down-regulate the inflammatory response. My talk will focus on our current efforts to understand the role of apoptotic cells in the resolution of inflammation, and the role of bioactive lipids in mediating these responses.

Bio-Summary

Dr. Brown was born and raised in a small town in western Illinois. He was a double major at Quincy College (Quincy, IL) earning a B.S. in Chemistry and in Biological Sciences in

1981. He then completed an M.S. degree program in Animal Science at the University of Illinois in 1984 in the laboratory of Dr. Peter Bechtel. Dr. Brown then worked for the Illinois Environmental Protection Agency as a chemist for three years before moving to Chicago to continue his education. He began working for Dr. Rima McLeod as a research technician at Michael Reese Hospital and Medical Center and simultaneously entered graduate school at Northwestern University in pharmacology. Finding he was much more interested in immunology than pharmacology, he left Northwestern and entered graduate school in immunology at the University of Chicago studying *Toxoplasma gondii* infection in the McLeod lab, earning a Ph.D. in 1993. He then joined the laboratory of Dr. Steven Reiner in 1994 as a postdoc and studied Th1/Th2 differentiation using the *Leishmania major* model system. During this time, he also established a Lyme Disease project which remains the focus of his laboratory today. Dr. Brown began his faculty career at the University of Missouri in 2000 in the Department of Veterinary Pathobiology where he has been a full Professor since 2011.