

## ABSTRACT

**THESIS:** INVESTIGATING THE DEPOSITION OF STREPTOCOCCUS PYOGENES M-6 10F5 EPI TOPE ANTIBODY PRODUCTION AND MACROPHAGE INFILTRATION IN LEWIS RAT HEARTS

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Group A *Streptococcus pyogenes* (GAS) is responsible for 700 million infections each year. Specific M proteins of GAS have been shown to contribute to autoimmune antibody production. To determine the effects of the M6 10F5 epitope of GAS, this peptide was injected subcutaneously, along with a Stimune adjuvant, into the experimental (EX) group of Lewis rats. Negative control rats receive no injection and experimental control (EC) rats received Stimune only injections. Each injection was given on day 1 and day 28. Hearts were harvested after euthanasia, sectioned into atria, valve, and ventricle regions, and sliced. Immunofluorescence was used to analyze heart slices. A significant amount of antibody binding over EC was observed in only the ventricle region. Macrophage infiltration into the valve was greatest in EX. Libman-Sacks vegetations were observed in 67% of EX heart valves. The 10F5 epitope

generated antiphospholipid antibodies that promoted the production of Libman-Sacks endocarditis vegetations.

