

James & Esther King Biomedical Research Program

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*2010 Program
Technology Transfer Feasibility
(1-year project)*

Project Title: Global Mapping of Autoantigen Biomarkers for AMD

Project Summary: Age-related macular degeneration (AMD) affects more than 1.75 million individuals in the United States and is a leading cause of irreversible blindness in industrialized countries. Smoking increases the risk of AMD. Early diagnosis is important because treatment will delay or reduce the severity of the disease. AMD is currently diagnosed by its clinical symptoms with retinal imaging technologies. The disease course and prognosis are diverse and unpredictable. Protein biomarkers will facilitate early diagnosis and preventive therapy. The critical barrier to early diagnosis of AMD is that there are few biomarkers available with reliability. The long-term goal of this project is to systematically identify all AMD-relevant self-antigens as biomarkers to determine globally their blood autoantibody activity for AMD diagnosis with minimal invasion. The objective is to globally identify AMD-relevant self-antigens by a newly developed technology. The hypothesis is that the new technology globally identifies all AMD-relevant self-antigens. The hypothesis will be investigated by globally identifying AMD-relevant self-antigens with the new technology, independently validating identified self-antigens, and analyzing their reliability as biomarkers for AMD diagnosis. The outcomes of this project will develop a new technology for global identification of all self-antigens as biomarker for AMD early diagnosis. The new technology is broadly applicable to many other diseases for diagnosis.