

Project Summary/Abstract

Kidney failure due to end-stage renal disease is escalating at an alarming rate, motivating renal investigators and clinicians to identify research priorities in search for better ways to prevent and treat kidney disease. There is a crucial need for increases in resources and manpower in research in kidney disease. An impediment to renal research has been dwindling resources and loss of protected time to devote to research in the face of an ever-increasing demand for further exploration of research ideas. **There is a significant need and market potential for readily available reagents and tissue products from established models and human cases of renal disease.** To address this deficit, Probetex was founded as a "Renal Research Resource Company" to create a repository of "off-the-shelf" tissue products to provide readily available samples and help investigators to quickly and efficiently explore their ideas on established and standardized models or identified cases of human disease. This Phase II application focuses on large-scale production of reagents and tissue products (tissue sections, protein lysates, purified RNA, and prefabricated Western and Northern blots) derived from the six models of kidney disease collectively representing the most common forms of renal disease presented clinically. These same products will be developed from normal and diseased human kidney. The models include 1. Mesangial Proliferative Glomerulonephritis (anti-Thy-1), 2. Immune-mediated Crescentic Glomerulonephritis and Interstitial Nephritis (anti-GBM), 3. Membranous Nephropathy (anti-Fx1A), 4. Lupus nephritis, 5. Type 1 and 6. Type 2 diabetic nephropathy. This grant will enable large-scale processing of existing lots of sheep antibodies developed to create reagents to induce three classical immune models of kidney disease (1-3 above). Also, manufacture of tissue products from the disease models will be processed for distribution as single units or in multiple arrays of tissue and prefabricated Western and Northern blots for comparison analysis of samples of different diseases or time points in the same application. Also, as part of Probetex's mission, the company, will prepare for commercialization seven kidney cell lines (embryonic stem cells and glomerular mesangial, epithelial, and endothelial cells). A plan to expand the scope of products through licensing and out-sourcing strategies will be implemented as part of the company's long-range goal.