Urinary Protein Biomarker Assay for Idiopathic Nephrotic Syndrome

Brief Description of Technology
Biomarker panel for distinguishing idiopathic steroid resistant vs. steroid sensitive nephrotic syndrome.

Technology Overview
Idiopathic nephrotic syndrome (INS) is the most common pediatric glomerular disorder, and the most common treatment is steroids. However, of the patients diagnosed, over 90% of children with minimal change disease will respond to steroids while 10% will be steroid resistant. Accordingly, steroids offer very little benefit for treatment of the most common resistant form, focal segmental glomerulosclerosis (FSGS). Cincinnati Children's researchers have defined methods of determining whether a patient diagnosed with nephrotic syndrome has steroid sensitive nephrotic syndrome (SSNS) or steroid resistant nephrotic syndrome (SRNS) by determining the levels of one or more biomarkers in patient biofluid.

Applications
- Diagnosis, prognosis, and stratification of patients with idiopathic nephrotic syndrome of varying types.
- Use in the development of kits and substrates related to the detection and treatment of SSNS and SRNS.

Advantages
- Osteoporosis, adrenal suppression, hyperglycemia, dyslipidemia, cardiovascular disease, Cushing's syndrome, psychiatric disturbances and immunosuppression are among the more serious side effects noted with systemic corticosteroid therapy.
- Prevents undue harm in a diverse patient population and guides therapies used to treat SRNS patients at initial disease presentation by understanding which patients would benefit from steroid treatment and those who would not.

Market Overview
INS is responsible for ~12% of all causes of end-stage kidney disease and up to 20% in children. Approximately 5/100K children are diagnosed with NS each year and 15/100K are living with it.

Investigator Overview
Michael Bennett, PhD, Director, Biomarker Laboratory