Genetic targets for the prediction, diagnosis, and treatment of IgA nephropathy

Technology #2798

This technology is a diagnostic tool to assess patients’ risk of IgA nephropathy based on the presence or absence of seven specific alleles.

Unmet Need: Non-invasive quantitative diagnostic method to accurately predict risk of IgA nephropathy

IgA nephropathy is an autoimmune condition that can result in kidney damage and even renal failure in young adults. Currently physicians rely on a patient’s ethnicity and family history to determine risk of IgA nephropathy, and a definitive diagnosis requires an invasive and potentially painful surgical renal biopsy. A non-invasive method to identify patients’ risk of disease could spare low-risk patients from a potentially dangerous invasive biopsy and inform family planning.

The Technology: Non-invasive quantitative diagnostic tool using genetic markers for IgA nephropathy

This technology provides a non-invasive predictive tool to quantitatively determine IgA nephropathy risk based on the presence of five specific alleles. These genes were identified through genome-wide association studies that identified specific genes and alleles implicated in IgA nephropathy pathogenesis. As such, this technology provides a simple genetic test for IgA nephropathy risk that doesn’t involve invasive renal biopsies. Additionally, the genes identified in this technology are promising therapeutic targets, and therapies that modulate these genes and their associated products using RNAi, antibodies, or small molecule inhibitors could provide effective treatments for IgA nephropathy.

This technology was evaluated against three sample patient populations and successfully identified a 5-fold increase in risk for developing IgA nephropathy at the highest calculated risk level.
Applications:

- Non-invasive diagnostic assay for IgA nephropathy
- Therapeutic targets for IgA nephropathy
- Research tool for studying the genetic mechanism of IgA nephropathy pathology

Advantages:

- Non-invasive assay doesn’t require a renal biopsy
- Quantitative risk assessment
- Identifies novel targets for future therapeutics
- Simple to implement in a clinical setting

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Patent Information:

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Related Publications:


Tech Ventures Reference:

- IR 2798
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