A New Biomarker for Specific Diagnosis of Chronic Kidney Disease

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Technology description

Summary

Problem or Unmet Need:
Establishing whether a patient has chronic kidney disease versus acute kidney injury is currently difficult because the two ailments initially present similarly. Acute kidney injury is imminently life threatening requiring the patients be admitted to the hospital while this is not the case for chronic kidney disease. Although subsequent examinations can establish which disease is present, the process is time consuming. A method to rapidly, specifically test whether a patient has chronic kidney disease would prevent unnecessary treatments from being administered and allow an effective treatment regime to begin in a timely manner.
Details of the Invention:
This invention is a novel biomarker for chronic kidney disease that is easily detectable through a urine test. The biomarker is a high molecular weight protein complex that contains neutrophil gelatinase-associated lipocalin (Ngal) and various other components. Ngal is detectable in both chronic kidney disease and acute kidney injury, but this high molecular weight Ngal-containing complex is specific to chronic kidney disease. Using current technologies that can separate high and low molecular weight complexes, an antibody to Ngal can efficiently detect the complex, thereby specifically diagnosing the patient with chronic kidney disease. This method can therefore be used in a number of applications to prevent, diagnose, and monitor the disease.

Application area

Screening tool for detecting preclinical kidney failure
Allows chronic disease progression to be monitored
Provides a measure for treatment efficacy
Determines stage of chronic disease

Advantages

Rapid, specific diagnosis of chronic kidney disease

Institution

Columbia University

Inventors

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