

New discovery to aid in diagnosis and treatment of kidney disease

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Researchers from Boston University School of Medicine (BUSM) in collaboration with scientists at the University of Louisville and the University of Nice Sophia Antipolis in France, have identified the target antigen PLA2R in patients with idiopathic membranous nephropathy (kidney disease), which has implications for the diagnosis and treatment of this disease. These findings appear in the July 2 issue of the *New England Journal of Medicine*.

Idiopathic membranous nephropathy involves the thickening and dysfunction of the filtering parts of the kidneys called glomeruli. It is caused when antibodies attack the glomeruli causing large amounts of protein to leak into the urine. It is a relatively common cause of adult-onset kidney disease that can progress over time to cause [kidney failure](#). Until now, the diagnosis of membranous nephropathy required a kidney biopsy as there are no blood or urine tests to specifically distinguish membranous nephropathy from other causes of [kidney disease](#). This is because up until now the protein that is the target of the circulating auto-antibodies has never been identified.

To identify the target antigen in patients with this condition, the researchers used circulating antibodies from adults with this disease to detect normal glomerular proteins. Subsequent analysis with the use of mass spectrometry and confirmation with the use of protein-specific reagents allowed for identification and characterization of the predominant protein detected by these circulating antibodies.

According to the researchers this discovery has important implications for both the diagnosis and treatment of membranous nephropathy.

"Identifying the antigen will enable development of a simple blood test that could replace the need for a kidney biopsy and establish which patients are most likely to benefit from immunosuppressive treatment," said senior author David Salant, MD, a professor of medicine at BUSM and chief of the renal section at Boston Medical Center.

"Our findings show that PLA2R is a major target antigen in idiopathic membranous nephropathy. Seventy percent of our patients with biopsy-proven idiopathic membranous nephropathy had IgG antibodies that reacted with PLA2R, a constituent of normal human glomeruli," he added.

Source: Boston University Medical Center

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