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Proteomics for rejection diagnosis in renal transplant patients: Where are we now?

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**Abstract**

Rejection is one of the key factors that determine the long-term allograft function and survival in renal transplant patients. Reliable and timely diagnosis is important to treat rejection as early as possible. Allograft biopsies are not suitable for continuous monitoring of rejection. Thus, there is an unmet need for non-invasive methods to diagnose acute and chronic rejection. Proteomics in urine and blood samples has been explored for this purpose in 29 studies conducted since 2003. This review describes the different proteomic approaches and summarizes the results from the studies that examined proteomics for the rejection diagnoses. The potential limitations and open questions in establishing proteomic markers for rejection are discussed, including ongoing trials and future challenges to this topic.

**Key words:** Kidney transplantation; Acute rejection; Chronic rejection; T cell-mediated rejection; Antibody-mediated rejection; Long-term outcome; Graft failure; biopsy; Non-invasive markers; proteome; Proteomics; Mass spectrometry; Diagnostic marker; Study design; Diagnostic trial

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Characterization of Renal Allograft Rejection by Urinary Proteomic Analysis ... Thirty-four urine samples were collected from 32 renal transplant patients at various stages .... In conclusion, we propose a new method for the diagnosis of acute rejection that is ... And this is based on our best gold standard now, which is biopsy.

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