Background: Polycystic kidney disease (PKD) is characterized by the presence of multiple cysts that arise from the genitourinary tract. The severity and progression of the disease can vary widely between patients. Therefore, the identification of reliable biomarkers for PKD can help in the early diagnosis and monitoring of the disease.

Methods: We have identified that the ratio of polycystin-1 to TMEM2 proteins (PKD1/TMEM2) in urinary exosomes is differentially expressed in PKD patients compared to controls. Exosomes are isolated by ultrafiltration, followed by centrifugation at 200,000xg for 24 hours. The proteins are then analyzed by mass spectrometry to identify biomarkers for PKD.

Results: The ratio of PKD1/TMEM2 in urinary exosomes is reliably estimated using a LC-MS/MS workflow. This workflow provides a rapid and cost-effective method for the identification of PKD biomarkers in urinary exosomes.

Conclusions: The development of a rapid LC-MS/MS workflow for the detection of PKD biomarkers in urinary exosomes represents a significant advancement in the field of PKD diagnostics. This workflow has the potential to revolutionize the diagnosis and management of PKD.