

통합 기술을 바탕으로 IgAN과 TBMN을 구별할 수 있는 단백질 진단 마커 발굴

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Identification of Protein Biomarkers to Differentiate IgA Nephropathy and Thin Basement Membrane Nephropathy by Integrative Technology

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To identify specific biomarkers and to understand the pathophysiological processes associated with immunoglobulin A nephropathy (IgAN) and thin basement membrane nephropathy (TBMN), the most common causes presenting isolated hematuria in childhood, proteomic profiling of urinary exosome was subjected to a systems biological analysis.

We selectively isolated urinary exosomes, from patients with IgAN, TBMN, or healthy normal controls and the Tube-Gel method was employed to increase trypsin-digestion efficiency. Following the label-free quantification by the MSE mode, we applied systems biology tools in order to discover meaningful biomarker candidates reflecting pathophysiological processes of the diseases.

We showed the identification of the systems biology-based biomarker candidates, using clinical urinary exosomes, and the potential mechanism to understand the pathogenesis of TBMN and IgAN in regards to protein levels. In order to validate the LC-MS/MS data, we analyzed the levels of biomarker candidates by Western blot analysis. The other proteins identified in this study may be additional biomarker candidates for diagnosis of these diseases.

Key Words : 진단인자, 면역글로불린A신증, 비박형 기저막 신증

Biomarker, IgA nephropathy, Thin basement membrane nephropathy