Taisuke Yamauchi - ***Comprehensive Identification of Novel Autoantibody Candidates in Opsoclonus-Myoclonus Ataxia Syndrome Using Proteome-Wide Screening Platforms***

Abstract:

Opsoclonus-myoclonus ataxia syndrome (OMAS) is a rare neuroinflammatory disorder, likely autoimmune in origin, but its specific autoantibody targets have not been well characterized. OMAS remains a diagnostic and therapeutic challenge due to its rarity, limited biomarker availability, and variability in clinical presentation. In this study, we performed a comprehensive analysis of cerebrospinal fluid (CSF) from patients with OMAS using three complementary, proteome-wide screening approaches: human proteome microarrays, Phage ImmunoPrecipitation Sequencing (PhIP-seq), and Liquid Chromatography–Tandem Mass Spectrometry (LC-MS/MS). Each method enabled broad detection of candidate autoantibodies, facilitating a comprehensive exploration of the autoantibody repertoire in OMAS. From this integrated strategy, we identified several novel candidates of autoantibody not previously reported to be associated with OMAS. Further validation studies are underway. Our findings contribute to a deeper understanding of the OMAS immunopathology and may serve as a basis for future research for etiology or biomarker discovery.