RPH3A

Yasuda et al., reported that rabphilin-3A (RPH3A) an autoantigen and that anti-rabphilin-3A antibodies constitute a possible diagnostic marker for Lymphocytic infundibulo neurohypophysitis (LINH). However, the involvement of rabphilin-3A in the pathogenesis of LINH remains to be elucidated.

This study was undertaken to explore the role of rabphilin-3A in lymphocytic neurohypophysitis and to investigate the mechanism. They found that immunization of mice with rabphilin-3A led to neurohypophysitis. Lymphocytic infiltration was observed in the neurohypophysis and supraoptic nucleus 1 month after the first immunization. Mice immunized with rabphilin-3A showed an increase in the volume of urine that was hypotonic as compared with control mice. Administration of a cocktail of monoclonal anti-rabphilin-3A antibodies did not induce neurohypophysitis. However, abatacept, which is a chimeric protein that suppresses T-cell activation, decreased the number of T cells specific for rabphilin-3A in peripheral blood mononuclear cells (PBMCs). It ameliorated lymphocytic infiltration of CD3+ T cells in the neurohypophysis of mice that had been immunized with rabphilin-3A. Additionally, there was a linear association between the number of T cells specific for rabphilin-3A in PBMCs and the number of CD3+ T cells infiltrating the neurohypophysis. In conclusion, we suggest that rabphilin-3A is a pathogenic antigen, and that T cells specific for rabphilin-3A are involved in the pathogenesis of neurohypophysitis in mice [1)].

1)
Yasuda Y, Iwama S, Kiyota A, Izumida H, Nakashima K, Iwata N, Ito Y, Morishita Y, Goto M, Suga H, Banno R, Enomoto A, Takahashi M, Arima H, Sugimura Y. Critical role of rabphilin-3A in the pathophysiology of experimental lymphocytic neurohypophysitis. J Pathol. 2018 Apr;244(4):469-478. doi: 10.1002/path.5046. Epub 2018 Mar 9. PubMed PMID: 29377134.