Docket #: S20-513

Diagnostics and Targeting of EBV-transformed B cells for the Treatment of Multiple Sclerosis and Other Autoimmune Diseases

Multiple Sclerosis (MS) is a potentially disabling autoimmune disease whereby autoactivated T and B cells attack and destroy protective myelin sheaths of the central nervous system(CNS). Almost all MS patients have been infected with Epstein-Barr virus (EBV) prior to disease onset. Further, B cell depletion therapies have demonstrated significant efficacy in MS. Researchers at Stanford have uncovered novel insight suggesting that EBV transcription factor EBNA-1 mimics a CNS-specific membrane protein, thereby inducing autoantibody responses against myelin. This presents evidence of a dominant B-cell autoantigen that can serve as a diagnostic to aid in the diagnosis of MS in patients. In addition, this points to the potential of inhibiting or eliminating EBNA1-specific B cells as a therapeutic approach for MS.

Stage of Development: Ongoing development of diagnostic and therapeutics.

Applications

- EBV-infection related autoimmune diseases including MS

Advantages

- Antigen-specific approach with reduced toxicity

Patents

- Published Application: WO2022146869
- Published Application: 20240309451

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