"Autoimmune Aquaporinopathy"

Tech ID: 34437 / UC Case 2024-005-0

TECHNOLOGY DESCRIPTION

Unmet Need: Neuromyelitis optica (NMO) is a severe autoimmune disorder affecting the central nervous system (CNS), primarily targeting the water channel protein aquaporin-4 (AQP4.

Product: UCSF developed a cell-based assay for the diagnosis of neuromyelitis optica (NMO) and other autoimmune diseases (e.g., Sjogren's syndrome, lupus) derived from aquaporin 4 and 5 (AQP-4 and AQP5). This technology identifies specific pathogenic AQP4 epitopes that bind strongly to MHC II molecules and highlights the role of peripheral T cell-dependent deletional tolerance in limiting AQP4-mediated CNS autoimmunity.

Stage of Development: This invention is currently at the pre-clinical proof-of-concept stage, with foundational studies conducted in animal models.

Competitive Advantage: What makes this technology novel is its focus on peripheral T cell deletion as a key mechanism for maintaining tolerance to AQP4, a concept distinct from traditional thymic selection models. This discovery provides a unique perspective on autoimmune regulation and may open opportunities for innovative therapies targeting aquaporin-related autoimmune conditions.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

Neuromyelitis Optica, aquaporin-4, Sjogren's syndrome, Lupus, peripheral T cell, autoimmune

CATEGORIZED AS

- Biotechnology
- Health
- **Medical**
- Diagnostics
- Disease: Autoimmune and Inflammation
- Disease: Central Nervous System

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