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# "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

#### RELATED CASES

2024-005-0

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