Autoimmune CNS Demyelinating Disease Reflexive Panel

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Autoimmune central nervous system (CNS) demyelinating diseases include acute disseminated encephalomyelitis (ADEM), myelin oligodendrocyte glycoprotein antibody-associated disease (MOGAD), and neuromyelitis optica spectrum disorder (NMOSD). Antibodies associated with these conditions can serve as useful markers of disease.

Disease Overview

Autoimmune CNS demyelinating diseases, including ADEM, MOGAD, and NMOSD, are inflammatory disorders in which the dysregulated immune system targets antigens within the CNS. The most common manifestations of these diseases are optic neuritis, acute myelitis, or encephalopathy. Antineural antibodies serve as useful markers of these diseases, and their detection may help establish a diagnosis, support treatment decisions, aid prognostication, and serve as a prerequisite for enrollment in clinical trials. For more information about the testing strategy for NMOSD, refer to the ARUP Consult Neuromyelitis Optica Spectrum Disorders topic.

Multiple sclerosis (MS) is also an inflammatory demyelinating disease, but there are no specific antibody markers for this disease. For more information about the testing strategy for MS, refer to the ARUP Consult Multiple Sclerosis topic.

Test Description

ARUP's Autoimmune CNS Demyelinating Disease Reflexive Panel can be used for the evaluation of suspected autoimmune CNS demyelinating diseases, including ADEM, MOGAD, and NMOSD. This test is not intended for the evaluation of MS; for more information about appropriate testing for MS, refer to the ARUP Consult Multiple Sclerosis topic.

This panel includes antibodies associated with autoimmune CNS demyelinating disease. If there is subacute onset of progressive bilateral vision loss and concern for a paraneoplastic autoimmune etiology, consider the Autoimmune Vision Loss Reflexive Panel, which includes recoverin and CV2.1 antibodies. To compare these panels and the antibodies included, refer to ARUP Autoimmune Neurology Panel Components.

Testing for individual autoantibodies is also available separately and can be used for long-term monitoring.

Antibodies Tested and Methodology

<table>
<thead>
<tr>
<th>Autoantibody Marker</th>
<th>Method</th>
<th>Individual Autoantibody Test Code</th>
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<tbody>
<tr>
<td>AQP4 Ab, IgG</td>
<td>CBA-IFA, reflex titer</td>
<td>2013320</td>
</tr>
<tr>
<td>MOG Ab, IgG</td>
<td>CBA-IFA, reflex titer</td>
<td>3001277</td>
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Ab, antibody; AQP4, aquaporin-4; CBA, cell-binding assay/cell-based assay; IFA, indirect immunofluorescence assay; Ig, immunoglobulin; MOG, myelin oligodendrocyte glycoprotein
**Limitations**

This test does not include all known antineural antibodies. Patients may present with a clinical autoimmune CNS demyelinating disease but be negative for both MOG and AQP4 antibodies. Future studies are needed to understand whether these double negative patients have an as-yet undefined antineural antibody.

**Test Interpretation**

**Results**

Results must be interpreted in the clinical context of the individual patient; test results (positive or negative) should not supersede clinical judgment. This test is performed using a fixed CBA. Rare cases have been reported of patients testing negative using a fixed
CBA, but positive using a live CBA.\textsuperscript{2,3} If results are negative and there is a high suspicion for autoimmune CNS demyelinating disease, contact your laboratory and consider retesting by another method. At low titers (<1:40), the specificity of this assay decreases.\textsuperscript{4,5}

### Autoimmune CNS Demyelinating Disease Reflexive Panel (3001283): Results Interpretation

<table>
<thead>
<tr>
<th>Result</th>
<th>Interpretation</th>
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| Positive for ≥1 autoantibodies | Autoantibody(ies) detected  
May support a diagnosis of an autoimmune CNS demyelinating disease |
| Negative | No autoantibodies detected  
A diagnosis of an autoimmune CNS demyelinating disease is not excluded |

### References


### Related Information

- Autoimmune Neurologic Diseases - Antineural Antibody Testing
- Neuromyelitis Optica Spectrum Disorders
- ARUP Autoimmune Neurology Panel Components