Autoimmune Neurologic Disease Panel With Reflex, Serum and CSF

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Autoimmune neurologic diseases represent a broad category of conditions characterized by immune dysregulation. Antibodies associated with these conditions may be present in the serum or cerebrospinal fluid (CSF) and can serve as useful markers of disease. Testing for these antineural antibodies should be considered when patients experience subacute onset of new, unexplained neurologic symptoms.

Disease Overview

Autoimmune neurologic diseases may localize to the peripheral nervous system or central nervous system (CNS). They can manifest with diverse symptoms including (but not limited to) brainstem or cerebellar syndromes, dysautonomia, encephalopathy, epilepsy, movement disorders, myelopathy, psychiatric changes, or rapidly progressive dementia. Antineural antibodies serve as useful markers of these diseases, and their detection may help establish a diagnosis, support treatment decisions, aid prognostication, serve as a prerequisite for enrollment in clinical trials, and guide the search for an associated malignancy.

For more information about laboratory testing for autoimmune neurologic diseases, including detailed information about panel test selection, refer to the ARUP Consult Autoimmune Neurologic Diseases - Antineural Antibody Testing topic.

Featured ARUP Testing

Autoimmune Neurologic Disease Panel With Reflex, Serum 3018965

Method: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody / Qualitative Immunoblot / Quantitative Radioimmunoassay (RIA) / Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA) / Semi-Quantitative Indirect Fluorescent Antibody (IFA)

Autoimmune Neurologic Disease Panel With Reflex, CSF 3018967

Method: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody / Qualitative Immunoblot / Quantitative Radioimmunoassay (RIA) / Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA) / Semi-Quantitative Indirect Fluorescent Antibody (IFA)

Test Description

ARUP's serum or CSF Autoimmune Neurologic Disease With Reflex panels can be used for the evaluation of patients with subacute onset of neurologic symptoms with possible autoimmune etiology. Testing for the presence of antineural antibodies in both serum and CSF is recommended in most situations.[1]

These panels cover a broad range of autoimmune neurologic phenotypes; for greater diagnostic yield and improved turnaround time, consider choosing a phenotype-specific panel (see table below) rather than a broad panel.

ARUP Phenotype-Specific Panels to Consider for Autoimmune Neurologic Disease		
ARUP Panel	**Test Code**	
	Serum	CSF
Autoimmune Encephalopathy/Dementia Panel	3006201	3006202
Autoimmune Epilepsy Panel	3006204	3006205
Autoimmune Movement Disorder Panel	3018964	3018966
Autoimmune Myelopathy Panel	3006208	3006209
Autoimmune Dysautonomia Panel	3006203	—
Autoimmune Pediatric CNS Disorders	3006210	3006211

Regardless of the panel chosen, order only one panel for serum and/or one panel for CSF; many antineural antibodies are redundant between these panels, and choosing based on the predominant phenotype will provide the most meaningful results. To compare these panels and the antibodies included, refer to the ARUP Antineural Antibody Testing for Autoimmune Neurologic Disease page.

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

Antibodies Tested and Methodology

Autoimmune Neurologic Disease Panel With Reflex, Serum (3018965) and CSF (3018967): Antibodies Tested and Methodology			
Autoantibody Marker	Method	Individual Autoantibody or Focused Panel Test Code	
		Serum	CSF
AChR binding Ab, IgG[a]	RIA	0080009	—
AMPAR Ab, IgG	CBA-IFA	3001260	3001257
Amphiphysin Ab, IgG	IB	2008893	3004510
ANNA-1 (Hu)	IFA, reflex IB, reflex titer	2007961	2010841
ANNA-2 (Ri)	IFA, reflex IB, reflex titer	2007961	2010841
AQP4 Ab, IgG	CBA-IFA, reflex titer	2013320	—
CASPR2 Ab, IgG	CBA-IFA, reflex titer	2009452	3001986
CV2 (CRMP-5) Ab, IgG	CBA-IFA, reflex titer	3016999	3017001
DPPX Ab, IgG	CBA-IFA, reflex titer	3004359	3004512
GABA-AR Ab, IgG	CBA-IFA, reflex titer	3006008	3006003
GABA-BR Ab, IgG	CBA-IFA, reflex titer	3001270	3001267
GAD65 Ab	ELISA	2001771	3002788
Ganglionic AChR Ab, IgG	RIA	3003020	—
IgLON5 Ab, IgG	CBA-IFA, reflex titer	3006018	3006013
ITPR1 Ab, IgG	CBA-IFA, reflex titer	3006031	3006023
Kelch-like protein 11	CBA-IFA, reflex titer	3018507	3018508
LGI1 Ab, IgG	CBA-IFA, reflex titer	2009456	3001992
Ma2/Ta Ab, IgG	IB	3017441	3017440
mGluR1 Ab, IgG	CBA-IFA, reflex titer	3006044	3006039
MOG Ab, IgG	CBA-IFA, reflex titer	3001277	—
NMDAR Ab, IgG	CBA-IFA, reflex to titer	2004221	2005164
PCCA-1 (Yo)	IFA, reflex IB, reflex titer	2007961	2010841
PCCA-Tr/DNER	IFA, reflex IB, reflex titer	2007961	2010841
P/Q-type VGCC Ab, IgG	RIA	0092628	—
SOX1 (AGNA) Ab, IgG	IB	3002885	3002886
VGKC Ab, IgG	RIA	2004890	3001387

[a]Performed via reflex only, depending on the results of other autoantibody tests; refer to Reflex Patterns flowchart.

Autoantibody Marker	Method	Individual Autoantibody or Focused Panel Test Code	
		Serum	CSF

Ab, antibody; AChR, acetylcholine receptor; AGNA, antiglial nuclear antibody; AMPAR, alpha-amino-3-hydroxy-5-methyl-4-izoxazolepropionic acid receptor; ANNA, antineuronal nuclear antibody; AQP4, aquaporin-4; CASPR2, contactin-associated protein 2; CBA, cell-binding assay/cell-based assay; CRMP-5, collapsin response-mediator protein 5; DNER, Delta/notch-like epidermal growth factor-related receptor; DPPX, dipeptidyl-aminopeptidase-like protein 6; GABA-AR, gamma-aminobutyric acid receptor, type A; GABA-BR, gamma aminobutyric acid receptor, type B; GAD65, glutamic acid decarboxylase antibody 65-kd isoform; IFA, indirect immunofluorescence assay; Ig, immunoglobulin; IgLON5; IgLON family member 5; ITPR1, inositol 1,4,5-triphosphate receptor type 1; LGI1, leucine-rich, glioma-inactivated protein 1; mGluR1, metabotropic glutamate receptor 1; MOG, myelin oligodendrocyte glycoprotein; NMDAR, N-methyl-D-aspartate receptor antibody; PCCA, Purkinje cell cytoplasmic antibody; RIA, radioimmunoassay; SOX1, SRY-box transcription factor 1; VGCC, voltage-gated calcium channel; VGKC, voltage-gated potassium channel

Reflex Patterns

Autoimmune Neurologic Disease Panel With Reflex, Serum (3018965) and CSF (3018967)
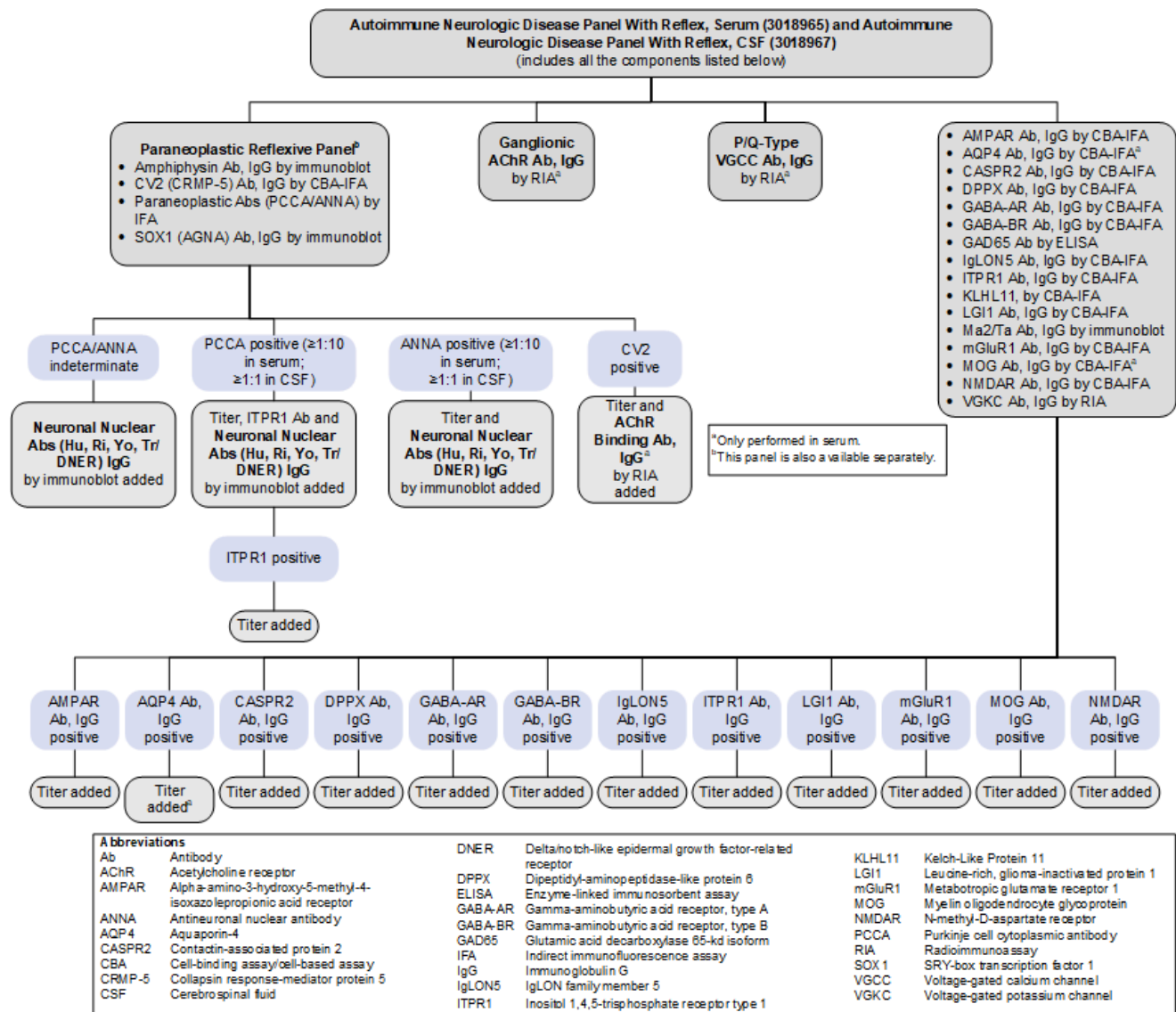
Limitations

These tests do not include all known antineural antibodies:

- Some antibodies are extremely rare or are of uncertain clinical significance.
- As testing for newly described antibodies becomes available and their clinical relevance is established, these panels will evolve to reflect these discoveries.

Test Interpretation

Results

Results must be interpreted in the clinical context of the individual patient; test results (positive or negative) should not supersede clinical judgement.

Autoimmune Neurologic Disease Panel With Reflex, Serum (3018965) and CSF (3018967): Results Interpretation	
Result	**Interpretation**
Positive for ≥1 autoantibodies	Autoantibody(ies) detected
	May support a diagnosis of autoimmune neurologic disease
	Consider a focused search for malignancy based on antibody-tumor associations
Negative	No autoantibodies detected
	A diagnosis of autoimmune neurologic disease is not excluded

References

1. Budhram A, Dubey D, Sechi E, et al. Neural antibody testing in patients with suspected autoimmune encephalitis. *Clin Chem*. 2020;66(12):1496-1509.