Paraneoplastic Reflexive Panel, Serum and CSF

Last Literature Review: June 2023 Last Update: May 2025

Paraneoplastic neurologic syndromes are rare disorders that occur due to the remote effects of tumors.[1] Antibodies associated with these conditions may be present in the serum or cerebrospinal fluid (CSF) and can serve as useful markers of disease.

Featured ARUP Testing

Paraneoplastic Reflexive Panel 3002929

Method: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody / Qualitative Immunoblot / Semi-Quantitative Indirect Fluorescent Antibody (IFA)

Paraneoplastic Reflexive Panel, CSF 3004517

Method: Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Immunoblot/Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

Disease Overview

Paraneoplastic neurologic syndromes are associated with a number of tumor types, including small cell lung cancer, thymoma, neuroblastoma, Hodgkin lymphoma, and ovarian, breast, and testicular tumors.[1] Researchers believe that paraneoplastic neurologic syndromes are caused by cancer-fighting components of the immune system, particularly antibodies and T cells. Instead of attacking only cancer cells, these immune agents also attack the normal cells of the nervous system and cause neurologic disorders. Paraneoplastic neurologic syndromes may present with multiple clinical manifestations (e.g., encephalitis, autonomic failure, peripheral neuropathy, cerebellar ataxia, and visual complaints).[2]

Certain well-characterized antineural antibodies (e.g., Hu, Ri, and Yo) are strongly associated with cancer and provide valuable information about which malignancies might need to be screened for in a patient. The detection of an antibody can also guide treatment decisions.

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

Test Description

ARUP's serum and CSF paraneoplastic reflexive panels can be used to aid in the diagnosis of paraneoplastic neurologic syndromes. Testing for the presence of antineural antibodies in both serum and CSF is recommended in most situations.

These panels only evaluate for the presence of high-risk paraneoplastic antibodies, independent of neurologic phenotype. As such, they do not include many clinically relevant antibodies that are not highly associated with cancer. Targeted phenotype-specific panels are **preferred** for the evaluation of autoimmune neurologic disease; strongly consider choosing one of these panels:

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
Autoimmune Stiff-Person Disorders	3006234	3006235

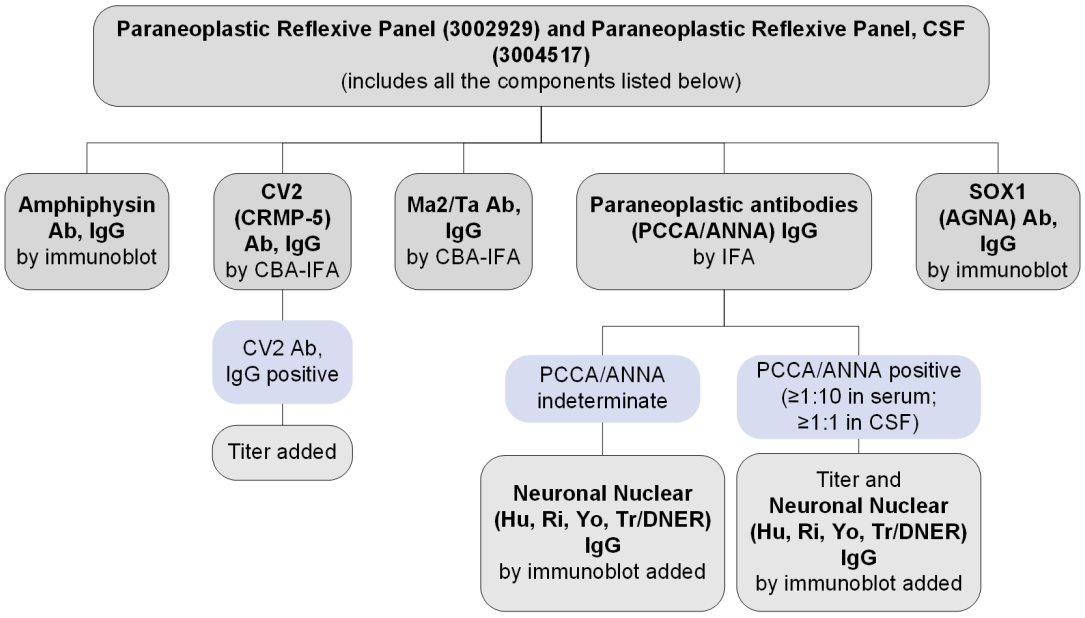
Antibodies Tested and Methodology

Paraneoplastic Panel Serum (3002929) and CSF (3004517) Antibodies Tested and Methodology			
Autoantibody Marker	**Method**	**Individual Autoantibody or Focused Panel Test Code**	
		Serum	**CSF**
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
CV2 (CRMP-5) Ab, IgG	CBA-IFA, reflex titer	3016999	3017001
Ma2/Ta Ab, IgG	IB	3017441	3017440
PCCA-1 (Yo)	IFA, reflex IB, reflex titer	2007961	2010841
PCCA-Tr/DNER	IFA, reflex IB, reflex titer	2007961	2010841
SOX1 (AGNA) Ab, IgG	IB	3002885	3002886

Ab, antibody; AGNA, antiglial nuclear antibody; ANNA-1, antineuronal nuclear antibody type 1; ANNA-2, antineuronal nuclear antibody type 2; CBA, cell-binding assay/cell-based assay; CRMP-5, collapsin response-mediator protein 5; DNER, Delta/notch-like epidermal growth factor-related receptor; IB, immunoblot; IFA, indirect immunofluorescence assay; Ig, immunoglobulin; PCCA-1, Purkinje cell cytoplasmic antibody type 1; PCCA-Tr, Purkinje cell cytoplasmic antibody type Tr; SOX1, SRY-box transcription factor 1

Reflex Patterns

Paraneoplastic Reflexive Panel Serum (3002929) and CSF (3004517): Reflex Patterns



Abbreviations			
Ab	Antibody	DNER	Delta/notch-like epidermal growth factor-related receptor
AGNA	Antiglial nuclear antibody	IFA	Indirect immunofluorescence assay
ANNA	Antineuronal nuclear antibody	IgG	Immunoglobulin G
CBA	Cell-binding assay/cell-based assay	PCCA	Purkinje cell cytoplasmic antibody
CRMP-5	Collapsin response-mediator protein 5	SOX1	SRY-box transcription factor 1
CSF	Cerebrospinal fluid		

Limitations

These tests evaluate only for the presence of high-risk paraneoplastic antibodies. As testing for newly described antibodies becomes available

and their clinical relevance is established, these panels may 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 judgment.

Paraneoplastic Reflexive Panel Serum (3002929) and CSF (3004517): Results Interpretation	
Result	**Interpretation**
Positive for ≥1 autoantibodies	Autoantibody(ies) detected May support a diagnosis of a paraneoplastic neurologic syndrome
Negative	No autoantibodies detected The diagnosis of a paraneoplastic neurologic syndrome is not excluded

References

1. Titulaer MJ, Soffietti R, Dalmau J, et al. Screening for tumours in paraneoplastic syndromes: report of an EFNS task force. *Eur J Neurol*. 2011;18(1):19-e3.

2. de Beukelaar JW, Sillevis Smitt PA. Managing paraneoplastic neurological disorders. *Oncologist*. 2006;11(3):292-305.

ARUP Laboratories is a nonprofit enterprise of the University of Utah and its Department of Pathology. 500 Chipeta Way, Salt Lake City, UT 84108
(800) 522-2787 | (801) 583-2787 | aruplab.com | arupconsult.com