MAYO CLINIC LABORATORIES

NEUROLOGY

AUTOIMMUNE NEUROLOGY ANTIBODY MATRIX
A TOOL TO GUIDE TEST ORDERING

The evolution of phenotype-specific antibody testing

Autoimmune neurology testing is rapidly evolving, with increasing numbers of clinically relevant biomarkers discovered each year. Mayo Clinic's Neuroimmunology Laboratory has developed a unique approach to ease physician burden and improve patient care. The concept of phenotype-specific antibody evaluations was created to enable physicians to select a test based on clinical presentation. Our testing includes the most relevant antibodies associated with each disease state, and the results provide clinically actionable answers in the shortest amount of time. We continually evaluate these panels and add or remove antibodies when necessary.

Which specimen should I test?

Certain neural antibodies are detected more readily in serum (e.g., LGI1, CASPR2), while others can be detected more readily in CSF (e.g., NMDA, GFAP). Testing both, simultaneously or sequentially, maximizes diagnostic yield.

30+
classified antibodies reported in our panels

44+
years of experience discovering and detecting neuronal antibodies

		PLASMA MEMBRANE SPECIFICITIES																				NUCLEAR AND CYTOPLASMIC SPECIFICITIES																							
		NMDA-R	LGI1	CASPR2	AMPA-R	GABA-B-R	DPPX	mGluR1	P/Q Type VGCC	AChR Ganglionic	PCA-Tr	AQP4	MOG	IgLON5	GlyR	NF155	CNTN1	GD1b	GM1	GQ1b	MAG	ANNA-1 (Hu)	ANNA-2 (Ri)	ANNA-3	AGNA (SOX1)	PCA-1 (Yo)	PCA-2	CRMP-5 (CV2)	Amphiphysin	GAD65	GFAP	GRAF1	ITPR1	NIF	Recoverin	KLHL11	Septin-5	Septin-7	AP3B2	Neurochondrin	TRIM46	PDE10A
AUTOIMMUNE & PARANEOPLASTIC CNS EVALUATIONS																																											
ENS2	Encephalopathy, Serum	•	•	•	•	•	•	•			•			•								•	•	•	•	•	•	•	•	•	•			•				•		•	•	•
ENC2	Encephalopathy, CSF	•	•	•	•	•	•	•			•			•								•	•	•	•	•	•	•	•	•	•			•				•		•	•	•
DMS2	Dementia, Serum	•	•	•	•	•	•	•			•			•								•	•	•	•		•	•	•	•	•			•						•	•	•
DMC2	Dementia, CSF	•	•	•	•	•	•	•			•			•								•	•	•	•		•	•	•	•	•			•						•	•	•
EPS2	Epilepsy, Serum	•	•	•	•	•	•	•			•											•	•	•	•		•	•	•	•	•									•	•	•
EPC2	Epilepsy, CSF	•	•	•	•	•	•	•			•											•	•	•	•		•	•	•	•	•									•	•	•
MDS2	Movement Disorder, Serum	•	•	•	•	•	•	•	•		•			•								•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•
MDC2	Movement Disorder, CSF	•	•	•	•	•	•	•			•			•								•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•
SPPS	Stiff-Person Spectrum Disorder, Serum						•								•														•	•												
SPPC	Stiff-Person Spectrum Disorder, CSF						•								•														•	•												
PCDES	Pediatric CNS Disorder, Serum	•	•	•	•	•	•	•			•	•	•									•								•	•									•		
PCDEC	Pediatric CNS Disorder, CSF	•	•	•	•	•	•	•			•	•										•								•	•									•		
MAS1	Myelopathy, Serum					•	•	•				•	•									•	•	•	•	•	•	•	•	•	•			•				•	•	•	•	
MAC1	Myelopathy, CSF					•	•	•				•										•	•	•	•	•	•	•	•	•	•			•				•	•	•	•	
PVLE	Vision Loss, Serum																											•							•							
CDS1	CNS Demyelinating Disease, Serum											•	•																													
AUTOIMMUNE & PARANEOPLASTIC PNS EVALUATIONS																																										
AIAES	Autoimmune Axonal, Serum		•	•										•								•		•	•	•	•	•	•		•			•				•				
DMNES	Peripheral Nervous System Demyelinating Neuropathy Autoimmune, Serum															•	•	•	•	•	•																						
GAES	Ganglioside, Serum																	•	•	•																						
CIDP	Chronic Inflammatory Demyelinating Polyradiculoneuropathy/Nodopathy, Serum															•	•																								
DYS2	Autoimmune Dysautonomia, Serum		•	•			•			•												•					•	•														
OTHER EVALUATIONS**																																										
PAVAL	Paraneoplastic, Serum										•											•	•	•	•	•	•	•	•													
PAC1	Paraneoplastic, CSF										•											•	•	•	•	•	•	•	•													

**PAVAL/PAC1 no longer contain all known, clinically relevant antibodies. We recommend using the above evaluations instead.

Follow-up testing is available for individual antibodies using Mayo ID: PNEFS and PNEFC

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PLASMA MEMBRANE SPECIFICITIES

ANTIBODY	ONCOLOGICAL ASSOCIATION	APPROXIMATE FREQUENCY
NMDA-R	Teratoma (ovarian or extra-ovarian)	50%
LGI1	Thymoma	<5%
CASPR2	Thymoma	<10%
AMPA-R	Thymoma, lung and breast carcinoma	70%
GABA-B-R	Small-cell lung carcinoma, other neuroendocrine neoplasm	70%
DPPX	B-cell neoplasia	<20%
mGluR1	Hodgkin lymphoma	50%
P/Q Type VGCC	Lung, breast, or gynecologic carcinoma	15%
AChR Ganglionic	Miscellaneous carcinomas, thymoma	<15%
PCA-Tr	Hodgkin lymphoma	70%–80%
AQP4	Rare, varied, more common in elderly patients	<20%
MOG	No specific oncological association	–
IgLON5	No specific oncological association	–
GlyR	Thymoma and lymphoma	<10%
NF155	No specific oncological association	–
CNTN1	No specific oncological association	–
GD1b	No specific oncological association	–
GQ1b	No specific oncological association	–
GM1	No specific oncological association	–
MAG	Waldenstrom's macroglobulinemia or lymphoma	<1%

NUCLEAR AND CYTOPLASMIC SPECIFICITIES

ANTIBODY	ONCOLOGICAL ASSOCIATION	APPROXIMATE FREQUENCY
ANNA-1 (Hu)	Small-cell lung carcinoma, neuroblastoma, thymoma	90%
ANNA-2 (Ri)	Small-cell lung carcinoma, breast adenocarcinoma	90%
ANNA-3	Aerodigestive carcinoma	90%
AGNA-1 (SOX1)	Small-cell lung carcinoma	90%
PCA-1 (Yo)	Ovary, other mullerian, or breast	90%
PCA-2	Small-cell lung carcinoma	90%
CRMP-5 (CV2)	Small-cell lung carcinoma, thymoma, thyroid, or renal carcinoma	90%
Amphiphysin	Small-cell lung carcinoma, breast adenocarcinoma	90%
GAD65	Thymoma	<10%
GFAP	Ovarian teratoma, other	25%
GRAF1	Breast, small-cell lung carcinoma	50%
ITPR1	Breast, small-cell lung carcinoma	30%
NIF	Neuroendocrine, small-cell lung carcinoma	77%
Recoverin	Small-cell lung carcinoma	70%
Kelch-11	Testicular germ-cell, seminoma	70%
Septin-5	None known	Unknown
Septin-7	None known	Unknown
AP3B2	None known	10%
Neurochondrin	Uterine carcinoma	10%
TRIM46	Neuroendocrine carcinoma including small-cell lung carcinoma	>70%
PDE10A	Renal carcinoma, adenocarcinoma	>70%

FOR CLINICAL OR TECHNICAL SUPPORT CONTACT OUR SPECIALISTS:
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SCAN to learn more

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