MAYO CLINIC LABORATORIES

AUTOIMMUNE NEUROLOGY ANTIBODY MATRIX
A TOOL TO GUIDE TEST ORDERING

NEUROLOGY

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.

40+
classified antibodies reported in our panels

45+
years of experience discovering and detecting neuronal antibodies

		PLASMA MEMBRANE SPECIFICITIES																					NUCLEAR AND CYTOPLASMIC SPECIFICITIES																											
		AChR Ganglionic	AMPA-R	AQP4	CASPR2	CNTN1	DPPX	GABA-A-R	GABA-B-R	GD1b	GlyR	GM1	GQ1b	IgLON5	LGI1	MAG	mGluR1	mGluR5	MOG	NF155	NMDA-R	PCA-Tr	P/Q Type VGCC	AGNA (SOX1)	AK5	ANNA-1 (Hu)	ANNA-2 (Ri)	ANNA-3	Amphiphysin	AP3B2	CRMP-5 (CV2)	GAD65	GFAP	GRAF1	ITPR1	KLHL11	Ma2	Neurochondrin	NIF	PCA-1 (Yo)	PCA-2	PDE10A	Recoverin	Septin-5	Septin-7	TRIM46
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 Disorders, Serum						•				•																		•			•														
SPPC	Stiff-Person Spectrum Disorders, CSF						•				•																		•			•														
PCDES	Pediatric CNS Disorder, Serum		•	•	•		•	•	•						•		•	•	•		•	•				•						•						•								
PCDEC	Pediatric CNS Disorder, CSF		•	•	•		•	•	•						•		•	•			•	•				•						•	•					•								
MAS1	Myelopathy, Serum			•			•		•								•		•					•		•	•	•	•	•	•	•					•		•	•				•	•
MAC1	Myelopathy, CSF			•			•		•								•							•		•	•	•	•	•	•	•	•				•	•	•	•				•	•
CDS1	CNS Demyelinating Disease, Serum			•															•																											
PVLE	Vision Loss, 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	•			•		•								•											•				•	•										•				

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
AChR Ganglionic	Miscellaneous carcinomas, thymoma	<15%
AMPA-R	Thymoma, lung and breast carcinoma	70%
AQP4	Rare, varied, more common in elderly patients	<20%
CASPR2	Thymoma	<10%
CNTN1	No specific oncological association	–
DPPX	B-cell neoplasia	<20%
GABA-A-R	Thymoma	<30%
GABA-B-R	Small-cell lung carcinoma, other neuroendocrine neoplasm	70%
GD1b	No specific oncological association	–
GlyR	Thymoma and lymphoma	<10%
GM1	No specific oncological association	–
GQ1b	No specific oncological association	–
IgLON5	No specific oncological association	–
LGI1	Thymoma	<5%
MAG	Waldenstrom's macroglobulinemia or lymphoma	<1%
mGluR1	Hodgkin lymphoma	50%
mGluR5	Hodgkin lymphoma	50%
MOG	No specific oncological association	–
NF155	No specific oncological association	–
NMDA-R	Teratoma (ovarian or extra-ovarian)	50%
PCA-Tr	Hodgkin lymphoma	70%–80%
P/Q Type VGCC	Lung, breast, or gynecologic carcinoma	15%

NUCLEAR AND CYTOPLASMIC SPECIFICITIES

ANTIBODY	ONCOLOGICAL ASSOCIATION	APPROXIMATE FREQUENCY
AGNA-1 (SOX1)	Small-cell lung carcinoma	90%
AK5	No specific oncological association	0%
Amphiphysin	Small-cell lung carcinoma, breast adenocarcinoma	90%
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%
AP3B2	None known	<10%
CRMP-5 (CV2)	Small-cell lung carcinoma, thymoma, thyroid, or renal carcinoma	90%
GAD65	Thymoma	<10%
GFAP	Ovarian teratoma, other	25%
GRAF1	Breast, small-cell lung carcinoma	50%
ITPR1	Breast, small-cell lung carcinoma	30%
Kelch-11	Testicular germ-cell, seminoma	70%
Ma2	Testicular germ-cell, non-small cell lung carcinoma	>75%
Neurochondrin	Uterine carcinoma	<10%
NIF	Neuroendocrine, small-cell lung carcinoma	77%
PCA-1 (Yo)	Ovary, other mullerian, or breast	90%
PCA-2	Small-cell lung carcinoma	90%
PDE10A	Renal carcinoma, adenocarcinoma	>70%
Recoverin	Small-cell lung carcinoma	70%
Septin-5	None known	Unknown
Septin-7	None known	Unknown
TRIM46	Neuroendocrine carcinoma including small-cell lung carcinoma	>70%

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FOR CLINICAL OR TECHNICAL SUPPORT CONTACT OUR SPECIALISTS:
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