

# Utilization guidelines for neurologic autoimmune panels

- The conventional "paraneoplastic panel" is no longer orderable and has been replaced by expanded autoimmune panels that are targeted to symptoms.
- **Which test?** Order the Encephalopathy Panel, which is the most comprehensive panel [covering paraneoplastic, movement disorders, dysautonomia, and encephalopathies]. If the primary clinical concern is dementia or epilepsy, order those specific panels.
- **Which specimen?** Serum is the preferred specimen with the best sensitivity for all antibodies except for NMDA and GFAP for which CSF is somewhat more sensitive.
- The neural antibody panels have significant overlap and the referral laboratory states that there is no indication to perform multiple serum or multiple CSF panels. *Orders for multiple panels will be cancelled.* If additional neural antibody testing is considered after a panel has been ordered/performed, clinical consultation is recommended. Please contact Client Services at 612-863-4678 and ask to speak to a clinical pathologist.

Autoimmune Panel Order	Excellian Order	NMDA-R	LG11	CASPR2	AmpA-R	GABA-B-R	DPPX	mGluR1	VGKC-Complex	P/Q Type VGCC	N-Type VGCC	AChR	Ganglionic PCA-TR	IgLON5	ANNA-1 (Hu)	ANNA-2 (Ri)	ANNA-3	AGNA (SOX1)	PCA-1 (Yo)	PCA-2	CRMP-5 (CV2)	Amphiphys in	Striational GAD65	GFAP	NIF	
Encephalopathy, Serum	LAB12690	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	
Encephalopathy, CSF	LAB12689	x	x	x	x	x	x	x					x	x	x	x	x	x	x	x	x	x		x	x	x
Dementia, Serum	LAB12688	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x		x	x	x		x	x	x
Dementia, CSF	LAB12687	x	x	x	x	x	x	x					x	x	x	x	x	x		x	x	x		x	x	x
Epilepsy, Serum	LAB12692	x	x	x	x	x	x	x		x	x	x	x		x	x	x	x		x	x	x		x	x	
Epilepsy, CSF	LAB12691	x	x	x	x	x	x	x					x		x	x	x	x		x	x	x		x	x	
OLD Paraneoplastic, Serum	obsolete								x	x	x	x			x	x	x	x	x	x	x	x				
OLD Paraneoplastic, CSF	obsolete												x		x	x	x	x	x	x	x	x				
<b>Small panels and single tests</b>																										
Hu, Ri, Yo Antibody Panel	LAB994														x	x			x							
GAD65 antibody	LAB13403																							x		
NMDA-R antibody, CSF only	LAB994	x																								
VGKC-Complex antibody	obsolete	VGKC antibody has been replaced by LG11 and CASPR2 which are more sensitive and specific for autoimmune neurologic disorders. VGKC is never positive when these two tests are negative. On its own, VGKC is not clinically relevant.																								
Striational antibody	LAB14228																							x		
CRMP-5 antibody	LAB994																				x					

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Plasma membrane specificities		
Antibody	Oncological Association	Approximate Frequency
NMDA-R	Teratoma (ovarian or extra-ovarian)	50%
LGI1 Th	Thymoma	<5%
CASPR2	Thymoma	<10%
AMPA-R	Thymoma, lung and breast carcinoma	70%
GABA-B-R	R Small-cell lung carcinoma, other neuroendocrine neoplasm	70%
DPPX	B-cell neoplasia	<20%
mGluR1	Hodgkin lymphoma	50%
P/Q and N-Type Calcium Channel	Lung, breast, or gynecologic carcinoma	15%
AChR Ga	Ganglionic Miscellaneous carcinomas, thymoma	<15%
PCA-Tr	Hodgkin lymphoma	70-80%
IgLON5	No specific oncological association	
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 S	Small-cell lung carcinoma	90%
CRMP-5	Small-cell lung carcinoma, thymoma, thyroid, or renal carcinoma	90%
Amphiphysin	Small-cell lung carcinoma, breast adenocarcinoma	90%
GAD65	Occasionally (e.g., 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 carcinoma	60%

Reference: Mayo Clinic Laboratories, “Autoimmune Neurology Antibody Matrix: A tool to guide test ordering”, 2020. Allina Health Laboratory, 4/2021