



Test Definition: ENC2

Encephalopathy, Autoimmune/Paraneoplastic
Evaluation, Spinal Fluid

Reporting Title: Enceph, Autoimm/Paraneo, CSF

Performing Location: Mayo Clinic Laboratories - Rochester Main Campus

Ordering Guidance:

Multiple neurological phenotype-specific autoimmune/paraneoplastic evaluations are available. For more information as well as phenotype-specific testing options, see [Autoimmune Neurology Test Ordering Guide](#).

When more than one evaluation is ordered on the same order number, the duplicate test will be canceled.

For a list of antibodies performed with each evaluation, see [Autoimmune Neurology Antibody Matrix](#).

This test is intended to be ordered for **adult** patients. If this test is ordered for a patient younger than 18 years, it will be canceled and automatically reordered by the laboratory as PCDEC / Pediatric Autoimmune Encephalopathy/CNS Disorder Evaluation, Spinal Fluid. The pediatric autoimmune CNS disorders evaluation is part of an evolving approach to testing for autoimmune neurological disorders using phenotypic-specific evaluations that include multiple antibodies known for their disease association.

Necessary Information:

Provide the following information:

- Relevant clinical information
- Ordering healthcare professional's name, phone number, mailing address, and e-mail address

Specimen Requirements:

Container/Tube: Sterile vial

Preferred: Collection vial number 1

Acceptable: Any collection vial

Specimen Volume: 4 mL

Forms:

If not ordering electronically, complete, print, and send 1 of the following with the specimen:

-[Neurology Specialty Testing Client Test Request](#) (T732)

-[General Test Request](#) (T239)

-[Microbiology Test Request](#) (T244)

Specimen Type	Temperature	Time	Special Container
CSF	Refrigerated (preferred)	28 days	
	Ambient	72 hours	
	Frozen	28 days	

Result Codes:

Result ID	Reporting Name	Type	Unit	LOINC®
89079	AGNA-1, CSF	Alphanumeric		90827-7
5906	Amphiphysin Ab, CSF	Alphanumeric		90815-2

3852	ANNA-1, CSF	Alphanumeric		44768-0
7472	ANNA-2, CSF	Alphanumeric		56959-0
21633	ANNA-3, CSF	Alphanumeric		90836-8
21650	CRMP-5-IgG, CSF	Alphanumeric		63216-6
3988	PCA-1, CSF	Alphanumeric		90841-8
21632	PCA-2, CSF	Alphanumeric		90843-4
21631	PCA-Tr, CSF	Alphanumeric		90845-9
21702	GAD65 Ab Assay, CSF	Numeric	nmol/L	94359-7
61513	NMDA-R Ab CBA, CSF	Alphanumeric		93502-3
61514	AMPA-R Ab CBA, CSF	Alphanumeric		93491-9
61515	GABA-B-R Ab CBA, CSF	Alphanumeric		93426-5
34256	Encephalopathy, Interpretation, CSF	Alphanumeric		69048-7
618895	IFA Notes	Alphanumeric		48767-8
64280	LGI1-IgG CBA, CSF	Alphanumeric		94288-8
64282	CASPR2-IgG CBA, CSF	Alphanumeric		94286-2
64927	mGluR1 Ab IFA, CSF	Alphanumeric		94361-3
64934	DPPX Ab CBA, CSF	Alphanumeric		94283-9
605156	GFAP IFA, CSF	Alphanumeric		94360-5
606965	NIF IFA, CSF	Alphanumeric		96490-8
606951	IgLON5 CBA, CSF	Alphanumeric		96481-7
615866	Neurochondrin IFA, CSF	Alphanumeric		101451-3
615874	Septin-7 IFA, CSF	Alphanumeric		101464-6
620067	PDE10A Ab IFA, CSF	Alphanumeric		103842-1
616446	TRIM46 Ab IFA, CSF	Alphanumeric		103843-9

LOINC® and CPT codes are provided by the performing laboratory.

Supplemental Report:

No

Components:

Test Id	Reporting Name	CPT Units	CPT Code	Always Performed	Available Separately
AEECI	Encephalopathy, Interpretation, CSF			Yes	No
AMPCC	AMPA-R Ab CBA, CSF	1	86255	Yes	No
AMPHC	Amphiphysin Ab, CSF	1	86255	Yes	No
AGN1C	Anti-Glial Nuclear Ab, Type 1	1	86255	Yes	No
ANN1C	Anti-Neuronal Nuclear Ab, Type 1	1	86255	Yes	No
ANN2C	Anti-Neuronal Nuclear Ab, Type 2	1	86255	Yes	No
ANN3C	Anti-Neuronal Nuclear Ab, Type 3	1	86255	Yes	No
CS2CC	CASPR2-IgG CBA, CSF	1	86255	Yes	No
CRMC	CRMP-5-IgG, CSF	1	86255	Yes	No

DPPCC	DPPX Ab CBA, CSF	1	86255	Yes	No
GABCC	GABA-B-R Ab CBA, CSF	1	86255	Yes	No
GD65C	GAD65 Ab Assay, CSF	1	86341	Yes	Yes
GFAIC	GFAP IFA, CSF	1	86255	Yes	No
GL1IC	mGluR1 Ab IFA, CSF	1	86255	Yes	No
IG5CC	IgLON5 CBA, CSF	1	86255	Yes	No
LG1CC	LGI1-IgG CBA, CSF	1	86255	Yes	No
NCDIC	Neurochondrin IFA, CSF	1	86255	Yes	No
NIFIC	NIF IFA, CSF	1	86255	Yes	No
NMDCC	NMDA-R Ab CBA, CSF	1	86255	Yes	No
PCTRC	Purkinje Cell Cytoplasmic Ab Type Tr	1	86255	Yes	No
PCA1C	Purkinje Cell Cytoplasmic Ab Type 1	1	86255	Yes	No
PCA2C	Purkinje Cell Cytoplasmic Ab Type 2	1	86255	Yes	No
PDEIC	PDE10A Ab IFA, CSF	1	86255	Yes	No
SP7IC	Septin-7 IFA, CSF	1	86255	Yes	No
T46IC	TRIM46 Ab IFA, CSF	1	86255	Yes	No

CPT Code Information:

86255 x23

86341 x1

84182 AGNBC (if appropriate)

86256 AGNTC (if appropriate)

86255 AINCC (if appropriate)

86256 AMPIC (if appropriate)

84182 AMIBC (if appropriate)

84182 AN1BC (if appropriate)

86256 AN1TC (if appropriate)

84182 AN2BC (if appropriate)

86256 AN2TC (if appropriate)

86256 AN3TC (if appropriate)

86256 APHTC (if appropriate)

86256 CRMTC (if appropriate)

84182 CRMWC (if appropriate)

86256 DPPTC (if appropriate)

86256 GABIC (if appropriate)

86255 GFACC (if appropriate)

86256 GFATC (if appropriate)

86256 IG5TC (if appropriate)

86255 GL1CC (if appropriate)

86256 GL1TC (if appropriate)

86255 NCDCC (if appropriate)

86256 NCDTC (if appropriate)

- 86255 NFHCC (if appropriate)
- 86256 NIFTC (if appropriate)
- 86255 NFLCC (if appropriate)
- 86256 NMDIC (if appropriate)
- 84182 PC1BC (if appropriate)
- 86256 PC1TC (if appropriate)
- 86256 PC2TC (if appropriate)
- 84182 PCTBC (if appropriate)
- 86256 PCTTC (if appropriate)
- 86256 PDETC (if appropriate)
- 86255 SP7CC (if appropriate)
- 86256 SP7TC (if appropriate)
- 86255 T46CC (if appropriate)
- 86256 T46TC (if appropriate)

Reflex Tests:

Test Id	Reporting Name	CPT Units	CPT Code	Always Performed	Available Separately
AGNBC	AGNA-1 Immunoblot, CSF	1	84182	No	No
AINCC	Alpha Internexin CBA, CSF	1	86255	No	No
AMPIC	AMPA-R Ab IF Titer Assay, CSF	1	86256	No	No
AMIBC	Amphiphysin Immunoblot, CSF	1	84182	No	No
AN1BC	ANNA-1 Immunoblot, CSF	1	84182	No	No
AN2BC	ANNA-2 Immunoblot, CSF	1	84182	No	No
CRMWC	CRMP-5-IgG Western Blot, CSF	1	84182	No	Yes
DPPTC	DPPX Ab IFA Titer, CSF	1	86256	No	No
GABIC	GABA-B-R Ab IF Titer Assay, CSF	1	86256	No	No
GFACC	GFAP CBA, CSF	1	86255	No	No
GFATC	GFAP IFA Titer, CSF	1	86256	No	No
IG5TC	IgLON5 IFA Titer, CSF	1	86256	No	No
GL1CC	mGluR1 Ab CBA, CSF	1	86255	No	No
GL1TC	mGluR1 Ab IFA Titer, CSF	1	86256	No	No
NFHCC	NIF Heavy Chain CBA, CSF	1	86255	No	No
NIFTC	NIF IFA Titer, CSF	1	86256	No	No
NFLCC	NIF Light Chain CBA, CSF	1	86255	No	No
NMDIC	NMDA-R Ab IF Titer Assay, CSF	1	86256	No	No
PC1BC	PCA-1 Immunoblot, CSF	1	84182	No	No
PCTBC	PCA-Tr Immunoblot, CSF	1	84182	No	No
AGNTC	AGNA-1 Titer, CSF	1	86256	No	No
AN1TC	ANNA-1 Titer, CSF	1	86256	No	No
AN2TC	ANNA-2 Titer, CSF	1	86256	No	No
AN3TC	ANNA-3 Titer, CSF	1	86256	No	No
APHTC	Amphiphysin Ab Titer, CSF	1	86256	No	No

CRMTC	CRMP-5-IgG Titer, CSF	1	86256	No	No
NCDCC	Neurochondrin CBA, CSF	1	86255	No	No
NCDTC	Neurochondrin IFA Titer, CSF	1	86256	No	No
PC1TC	PCA-1 Titer, CSF	1	86256	No	No
PC2TC	PCA-2 Titer, CSF	1	86256	No	No
PCTTC	PCA-Tr Titer, CSF	1	86256	No	No
PDETC	PDE10A Ab IFA Titer, CSF	1	86256	No	No
SP7CC	Septin-7 CBA, CSF	1	86255	No	No
SP7TC	Septin-7 IFA Titer, CSF	1	86256	No	No
T46CC	TRIM46 Ab CBA, CSF	1	86255	No	No
T46TC	TRIM46 Ab IFA Titer, CSF	1	86256	No	No

Result Codes for Reflex Tests:

Test ID	Result ID	Reporting Name	Type	Unit	LOINC®
CRMWC	21747	CRMP-5-IgG Western Blot, CSF	Alphanumeric		53707-6
NMDIC	61523	NMDA-R Ab IF Titer Assay, CSF	Alphanumeric	titer	In Process
GABIC	61525	GABA-B-R Ab IF Titer Assay, CSF	Alphanumeric	titer	93425-7
AMPIC	61524	AMPA-R Ab IF Titer Assay, CSF	Alphanumeric	titer	93492-7
DPPTC	64991	DPPX Ab IFA Titer, CSF	Alphanumeric	titer	94284-7
GL1CC	64931	mGluR1 Ab CBA, CSF	Alphanumeric		93500-7
GL1TC	64989	mGluR1 Ab IFA Titer, CSF	Alphanumeric	titer	93501-5
GFATC	605134	GFAP IFA Titer, CSF	Alphanumeric	titer	93421-6
GFACC	605154	GFAP CBA, CSF	Alphanumeric		93422-4
AGNBC	607271	AGNA-1 Immunoblot, CSF	Alphanumeric		94383-7
AN1BC	607261	ANNA-1 Immunoblot, CSF	Alphanumeric		94390-2
AN2BC	607263	ANNA-2 Immunoblot, CSF	Alphanumeric		94388-6
PC1BC	607265	PCA-1 Immunoblot, CSF	Alphanumeric		94272-2
PCTBC	607267	PCA-Tr Immunoblot, CSF	Alphanumeric		94386-0
AMIBC	607269	Amphiphysin Immunoblot, CSF	Alphanumeric		94384-5
NFLCC	606971	NIF Light Chain CBA, CSF	Alphanumeric		96489-0
NFHCC	606969	NIF Heavy Chain CBA, CSF	Alphanumeric		96488-2
AINCC	606967	Alpha Internexin CBA, CSF	Alphanumeric		96482-5
IG5TC	606949	IgLON5 IFA Titer, CSF	Alphanumeric	titer	96480-9
NIFTC	607772	NIF IFA Titer, CSF	Alphanumeric	titer	96491-6
AGNTC	43443	AGNA-1 Titer, CSF	Alphanumeric	titer	94355-5
AN1TC	43440	ANNA-1 Titer, CSF	Alphanumeric	titer	94356-3
CRMTC	43445	CRMP-5-IgG Titer, CSF	Alphanumeric	titer	94706-9
SP7TC	616116	Septin-7 IFA Titer, CSF	Alphanumeric	titer	101457-0
NCDTC	616112	Neurochondrin IFA Titer, CSF	Alphanumeric	titer	101453-9
APHTC	618164	Amphiphysin Ab Titer, CSF	Alphanumeric	titer	94354-8
PC1TC	43446	PCA-1 Titer, CSF	Alphanumeric	titer	94363-9

AN2TC	43441	ANNA-2 Titer, CSF	Alphanumeric	titer	94357-1
PCTTC	43448	PCA-Tr Titer, CSF	Alphanumeric	titer	94362-1
AN3TC	43442	ANNA-3 Titer, CSF	Alphanumeric	titer	94358-9
PC2TC	43447	PCA-2 Titer, CSF	Alphanumeric	titer	94364-7
SP7CC	615872	Septin-7 CBA, CSF	Alphanumeric		101466-1
NCDCC	615864	Neurochondrin CBA, CSF	Alphanumeric		101449-7
T46CC	616450	TRIM46 Ab CBA, CSF	Alphanumeric		105524-3
T46TC	616448	TRIM46 Ab IFA Titer, CSF	Alphanumeric	titer	105526-8
PDETC	620069	PDE10A Ab IFA Titer, CSF	Alphanumeric	titer	105522-7

Reference Values:

Test ID	Reporting name	Methodology*	Reference value
AEECI	Encephalopathy, Interpretation, CSF	Medical interpretation	Interpretive report
AMPCC	AMPA-R Ab CBA, CSF	CBA	Negative
AMPHC	Amphiphysin Ab, CSF	IFA	Negative
AGN1C	Anti-Glial Nuclear Ab, Type 1	IFA	Negative
ANN1C	Anti-Neuronal Nuclear Ab, Type 1	IFA	Negative
ANN2C	Anti-Neuronal Nuclear Ab, Type 2	IFA	Negative
ANN3C	Anti-Neuronal Nuclear Ab, Type 3	IFA	Negative
CS2CC	CASPR2-IgG CBA, CSF	CBA	Negative
CRMC	CRMP-5-IgG, CSF	IFA	Negative
DPPCC	DPPX Ab CBA, CSF	CBA	Negative
GABCC	GABA-B-R Ab CBA, CSF	CBA	Negative
GD65C	GAD65 Ab Assay, CSF	RIA	< or =0.02 nmol/L Reference values apply to all ages.
GFAIC	GFAP IFA, CSF	IFA	Negative
GL1IC	mGluR1 Ab IFA, CSF	IFA	Negative
IG5CC	IgLON5 CBA, CSF	CBA	Negative
LG1CC	LGI1-IgG CBA, CSF	CBA	Negative
NCDIC	Neurochondrin IFA, CSF	IFA	Negative
NIFIC	NIF IFA, CSF	IFA	Negative
NMDCC	NMDA-R Ab CBA, CSF	CBA	Negative
PCTRC	Purkinje Cell Cytoplasmic Ab Type Tr	IFA	Negative
PCA1C	Purkinje Cell Cytoplasmic Ab Type 1	IFA	Negative
PCA2C	Purkinje Cell Cytoplasmic Ab Type 2	IFA	Negative
PDEIC	PDE10A Ab IFA, CSF	IFA	Negative
SP7IC	Septin-7 IFA, CSF	IFA	Negative
T46IC	TRIM46 IFA, CSF	IFA	Negative

Reflex Information:

Test ID	Reporting name	Methodology*	Reference value
AGNBC	AGNA-1 Immunoblot, CSF	IB	Negative
AGNTC	AGNA-1 Titer, CSF	IFA	<1:2
AINCC	Alpha Internexin CBA, CSF	CBA	Negative
AMPIC	AMPA-R Ab IF Titer Assay, CSF	IFA	<1:2
AMIBC	Amphiphysin Immunoblot, CSF	IB	Negative
AN1BC	ANNA-1 Immunoblot, CSF	IB	Negative
AN1TC	ANNA-1 Titer, CSF	IFA	<1:2
AN2BC	ANNA-2 Immunoblot, CSF	IB	Negative
AN2TC	ANNA-2 Titer, CSF	IFA	<1:2
AN3TC	ANNA-3 Titer, CSF	IFA	<1:2
APHTC	Amphiphysin Ab Titer, CSF	IFA	<1:2
CRMTC	CRMP-5-IgG Titer, CSF	IFA	<1:2
CRMWC	CRMP-5-IgG Western Blot, CSF	WB	Negative
DPPTC	DPPX Ab IFA Titer, CSF	IFA	<1:2
GABIC	GABA-B-R Ab IF Titer Assay, CSF	IFA	<1:2
GFACC	GFAP CBA, CSF	CBA	Negative
GFATC	GFAP IFA Titer, CSF	IFA	<1:2
IG5TC	IgLON5 IFA Titer, CSF	IFA	<1:2
GL1CC	mGluR1 Ab CBA, CSF	CBA	Negative
GL1TC	mGluR1 Ab IFA Titer, CSF	IFA	<1:2
NCDCC	Neurochondrin CBA, CSF	CBA	Negative
NCDTC	Neurochondrin IFA Titer, CSF	IFA	<1:2
NFLCC	NIF Light Chain CBA, CSF	CBA	Negative
NFHCC	NIF Heavy Chain CBA, CSF	CBA	Negative
NIFTC	NIF IFA Titer, CSF	IFA	<1:2
NMDIC	NMDA-R Ab IF Titer Assay, CSF	IFA	<1:2
PC1BC	PCA-1 Immunoblot, CSF	IB	Negative
PC1TC	PCA-1 Titer, CSF	IFA	<1:2
PC2TC	PCA-2 Titer, CSF	IFA	<1:2
PCTBC	PCA-Tr Immunoblot, CSF	IB	Negative
PCTTC	PCA-Tr Titer, CSF	IFA	<1:2
PDETC	PDE10A Ab IFA Titer, CSF	IFA	<1:2
SP7CC	Septin-7 CBA, CSF	CBA	Negative
SP7IC	Septin-7 IFA Titer, CSF	IFA	<1:2
T46CC	TRIM46 CBA, CSF	CBA	Negative
T46TC	TRIM46 IFA Titer, CSF	IFA	<1:2

*Methodology abbreviations:

Immunofluorescence assay (IFA)

Cell-binding assay (CBA)

Western blot (WB)

Radioimmunoassay (RIA)

Immunoblot (IB)

Neuron-restricted patterns of IgG staining that do not fulfill criteria for ANNA-1, ANNA-2, ANNA-3, CRMP-5-IgG, PCA-1, PCA-2, or PCA-Tr may be reported as "unclassified anti-neuronal IgG." Complex patterns that include nonneuronal elements may be reported as "uninterpretable."

Note: CRMP-5 titers lower than 1:2 are detectable by recombinant CRMP-5 Western blot analysis. CRMP-5 Western blot analysis will be done on request on stored spinal fluid (held 4 weeks). This supplemental testing is recommended in cases of chorea, vision loss, cranial neuropathy, and myelopathy. Call the Neuroimmunology Laboratory at 800-533-1710 to request CRMP-5 Western blot.