Some of the other **Key Tests** offered by **Dr LaL PathLabs** on Neurology segment

Test Name	Clinical Utility
Myasthenia Gravis Panel *Acetylcholine Receptor Binding Antibody *Striated / Skeletal Muscle Antibody in Dilutions	First Line Diagnosis of Myasthenia Gravis (MG) is characterized by muscle weakness and easy fatigability, most commonly due to auto-antibody mediated loss of functional acetylcholine receptors in the post-synaptic membrane of skeletal muscle.
Acetyl Choline Receptor (AChR) Binding	Diagnose acquired forms of Myasthenia Gravis for detecting sub-clinical MG in recipients of D-penicillamine.
MuSK (Muscle Specific Kinase) Antibody	Second order test to aid in the diagnosis of autoimmune Myasthenia gravis when first line serological test (AChR antibody)
Anti - NMO (Neuromyelyts Optica) Antibody / Aquaporin 4	Highly speci-fic serum autoantibody markers are found very Frequently in NMO which ensures effective diagnosis.
Multiple Sclerosis Panel *IgG Synthesis Index & rate *Oligoclonal Bands, CSF	Useful for diagnosing MS specially in patients with equivocal Clinical or radiological findings.
Duchenne / Becker Muscular Dystrophy (DMD / BMD) Gene Mutation	This assay detects deletions in all 79 exons of the dystrophin gene in both males and females.
ANTI NMDA Receptor / Anti-glutamate	Autoantibodies against glutamate receptors (NMDA) type are Specific markers for anti-glutamate receptor type encephalitis.
Neurovirus Panel Qualitative PCR (EBV, CMV, AV, HSV 1, HSV2, VZV, EV, PV,PCR HHV6, 8FB, HHV7)	based assay for rapid identification of specific DNA and RNA viruses from CSF.
Voltage Gated Potassium Channel (VGKC) Antibody	Diagnosis of clinical spectrum of acquired Neuromyotonia (NMT) and Cramp Fasciculation Syndrome (CFS).
Chroma Fic, Chromosome SNP Microarray, 750K High Resolution Test	A high resolution copy number array which enhances the detection of all chromosomes abnormalities. It can also detect copy neutral changes such as Uniparental Disomy (UPD) and Consanguinity
JAPANESE ENCEPHALITIS VIRUS (JEV) DETECTION PCR	Japanese encephalitis virus (JEV) is one of the most important causes of Viral encephalitis prevalent all over the world including India. It is closely related to West Nile, Saint Louis and Murray Valley encephalitis viruses. Molecular testing assists in early diagnosis of JEV prior to appearance of antibodies in blood.

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Dr Lal PathLabs

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NeuroPro

Neuro Diagnostic Experts

Neuronal Paraneoplastic Antibodies

Introduction

Paraneoplastic autoimmune neurological disorders reflect a patient's humoral and cellular immune responses to cancer. Seropositive patients usually present with subacute neurological symptoms of Encephalopathy, Cerebellar ataxia, Radiculopathy, Myelopathy & Neuromuscular transmission disorders. This assay is recommended in patients with past or family history of cancer, smoking and environmental exposure to carcinogens.

Need & Requirement of the Test

- Serological evaluation of patients who present with a subacute neurological disorder of undetermined etiology, especially those with known risk factors for cancer.
- Investigating neurological symptoms that appear in the course of, or after, cancer therapy, and are not explainable by metastasis.
- To detect Occult malignancy.
- Differentiating autoimmune neuropathies from neurotoxic effects of chemo therapy.
- Monitoring the immune response of seropositive patients in the course of cancer therapy.
- Detecting early evidence of cancer recurrence in previously seropositive patients.

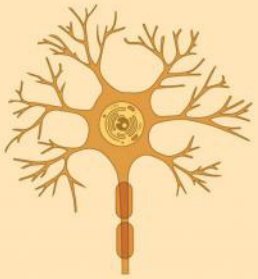
Dr Lal PathLabs Advantage

Neuronal (Paraneoplastic) Autoantibodies Profile Test

The test is a qualitative in vitro assay for detection of human autoantibodies of immunoglobulin class IgG against 6 different antigens **Amphiphysin, CV2, PNMA2, Ri, Yo** and **Hu** in serum or plasma for the diagnosis of Paraneoplastic Neurological Syndromes.

Done on fully automated platform so high precision - **immunoblot technique**

Antibody	Predominant Tumors	CNS Syndromes
anti-Hu (ANNA-1)	SCLC, Neuroblastoma	Encephalomyelitis, Paraneoplastic cerebellar degeneration (PCD)
anti-Ri (ANNA-2)	Breast, SCLC	Brain stem encephalitis, Opsoclonus-Myoclonus
anti-Amphiphysin	Breast, SCLC	Stiff person syndrome, Myelopathy and Myoclonus, Encephalomyelitis
anti-CV2 (CRMP5)	SCLC, Thymoma	Encephalomyelitis, Chorea, PCD, Limbic encephalitis
anti- PNMA1	Testicular	Brain stem encephalitis, Limbic encephalitis
anti-Yo (PCA-1)	Ovary, Breast, Testicular	PCD



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SpinoCerebellar Ataxia (SCA)

Introduction

Spinocerebellar ataxia is an inherited disorder of brain function. It is characterized by increasing problems with coordination that often affect the legs, hands and speech. There are more than 20 types of SCA that have been described.

There are two main categories of ataxia, acquired and hereditary :

Acquired (non-genetic) Ataxia	Hereditary Ataxia
Acquired ataxia is not passed on in families, e.g.- Multiple System Atrophy (MSA)	Hereditary ataxia is passed on in families, and shows a clear inheritance pattern. Friedreich ataxia (FA) is one of the most common types of inherited ataxia

Need & Requirement of the Test

Spinocerebellar Ataxia is slowly progressive, which means that symptoms of the condition gradually worsen over a period of years. Some types of SCA can progress more rapidly than others. Brain scans such as magnetic resonance imaging (MRI) and computerized tomography (CT) of affected persons often show shrinkage or atrophy of the cerebellum that becomes more noticeable as the disease progresses. At this time, there is no cure or treatment that can prevent or slow the progression of symptoms or the damage to the cerebellum.

Because there is an overlap of symptoms among the different types of Spinocerebellar ataxia, genetic testing is needed to determine with certainty the type of SCA in an affected person.

***At present, Spino cerebellar ataxia has no cure.**
It can be easily misdiagnosed as another neurological condition, such as multiple sclerosis (MS).

Dr Lal PathLabs Advantage

- **Test based on PCR fragment analysis (DNA Analysis) method- most precise method of identifying SCA including the specific type.**
- **Test conducted on EDTA whole Blood**

SCA Panels for diagnosing Spinocerebellar ataxia (SCA)

Test Code	Name of the Test	
NI33	SCA-1 (SPINOCEREBELLAR ATAXIA), ATXN1 GENE MUTATION	Spinocerebellar ataxia (SCA) or also known as Spinocerebellar atrophy or Spinocerebellar degeneration, is a progressive, degenerative genetic disease with multiple types. In SCA 1 there is a CAG trinucleotide repeat in chromosome 6p which gets affected which results in abnormal Ataxin-1 protein production.
NI34	SCA-2 (SPINOCEREBELLAR ATAXIA), ATXN2 GENE MUTATION	Spinocerebellar ataxia (SCA) or also known as Spinocerebellar atrophy or Spinocerebellar degeneration, is a progressive, degenerative genetic disease with multiple types. In SCA 2 there is a CAG trinucleotide repeat in chromosome 12q which gets affected which results in abnormal Ataxin 2 protein production
NI35	SCA-3 (SPINOCEREBELLAR ATAXIA), ATXN3 GENE MUTATION	Spinocerebellar ataxia (SCA) or also known as Spinocerebellar atrophy or Spinocerebellar degeneration, is a progressive, degenerative genetic disease with multiple types. In SCA 3 there is a CAG trinucleotide repeat in chromosome 14q which gets affected which results in abnormal Ataxin 3 protein production
NI36	SCA-6(SPINOCEREBELLAR ATAXIA), CACNA1A GENE MUTATION	Spinocerebellar ataxia (SCA) or also known as Spinocerebellar atrophy or Spinocerebellar degeneration, is a progressive, degenerative genetic disease with multiple types. In SCA 6 there is a CAG trinucleotide repeat in chromosome 19p which gets affected which results in abnormal CACNA1A protein.
NI37	SCA-7 (SPINOCEREBELLAR ATAXIA), ATXN7 GENE MUTATION	Spinocerebellar ataxia (SCA) or also known as Spinocerebellar atrophy or Spinocerebellar degeneration, is a progressive, degenerative genetic disease with multiple types. In SCA 7 there is a CAG trinucleotide repeat in chromosome 3p which gets affected which results in abnormal Ataxin 7 protein.
Z863	SCA (SPINOCEREBELLAR ATAXIA), COMPREHENSIVE PROFILE	Spinocerebellar ataxia (SCA) or also known as Spinocerebellar atrophy or Spinocerebellar degeneration, is a progressive, degenerative genetic disease with multiple types. This test detects SCA1, SCA2, SCA3, SCA6, SCA7 and SCA 12
NI46	SCA-12 (SPINOCEREBELLAR ATAXIA), PPP2R2B GENE MUTATION	Spinocerebellar ataxia (SCA) or also known as Spinocerebellar atrophy or Spinocerebellar degeneration, is a progressive, degenerative genetic disease with multiple types. This test detects SCA1, SCA2, SCA3, SCA6, SCA7 and SCA 12

***https://rarediease.info.nih.gov/diseases/10748/Spinocerebellar- ataxia**
#https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3138714/figure/F2

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Autoimmune Encephalitis

Introduction

Autoimmune Encephalitis is increasingly recognized as a significant diagnosis in the spectrum of brain illness related to malfunction of the immune system. It is Associated with paraneoplastic and non-paraneoplastic aetiology. Most commonly antibody associated is antibody against NMDA receptor.

With rapid diagnosis and appropriate treatment, many patients recovers for most or all functions.

Need & Requirement of the Test

Only way to confirm the diagnosis of Autoimmune Encephalitis and type of antibody associated. Single test for antibodies against NMDA, CASPR2 & LGI1 are available, but panel is required that increases the number of antibodies which can be detected and panel is more cost effective as compared to single test.

Dr Lal PathLabs Advantage

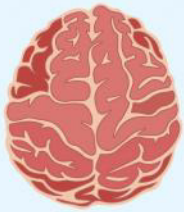
Panel composed to detect autoantibodies against cell surface/synaptic antigens involved in causing brain illness producing a wide range of neuro-psychiatric symptoms.

Specifically created panel to detect antibodies against -

Autoimmune encephalitis Test

1) NMDA (N-methyl-D-aspartate) anti-glutamate receptor against NR1 subunit.
2) AMPA (Alpha-amino- 3-hydroxy-5-methy-4-isoxazol-propionic acid) anti -glutamate receptor- GluR1.
3) AMPA (Alpha-amino- 3-hydroxy-5-methy-4-isoxazol-propionic acid) anti -glutamate receptor- GluR2.
4) GABA-B (Gamma -amino -butyric acid)receptor.
5) LGI-1 antibody (Leucine -rich glioma -inactivated protein 1) (VGKC type).
6) CASPR2 antibody (Contactin – associated protein 2) (VGKC type).

- **These antibodies can be detected in Serum and/or Cerebrospinal fluid (CSF)**
- **Cell based assay using transfected cells expressing the antigens to detect antibodies by indirect immunofluorescence.**



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1. Rate on scale of 1-5,

- **Dr Lal PathLabs services** .....
- **Neuro campaigns launched by Dr Lal PathLabs** .....

a) Your Doctor your memories campaign
b) PIC campaign
c) Neurology Academy online CME certification module

2. Is the message conveyed properly from our Neurology campaigns?

YES ☐ NO ☐

3. Would you like to suggest any additional test/panel?

YES ☐ NO ☐

If yes, ...

4. Other suggestions (if any)

.....

.....

Please share your feedback and you can also write to us at ***doctorfeedback@lalpathlabs.com***

Signature / Stamp