

PNS-relevant autoantibodies against intracellular neuronal antigens with associated neurological diseases
And possibly associated tumors

Autoantibody (Synonym(s))	Antigen (Molecular mass(es)) Localisation (L)	Associated diseases Most frequent syndromes (FS) Other syndromes(OS)	Associated tumors Most frequent tumors(FT) Other tumors (OT)
Anti-Hu (ANNA-1, Anti-neuronal Nuclear auto- Antibody, type 1)	Hu protein , basic RNA Binding protein (38 kDa) L: Cell nuclei of neurons In the central and peripheral nervous system	FS: Encephalitides with Focus in brain stem, cerebellum and limbic system;Myelitis;polyneuropathy (autonomous, sensory,Sensory-motor) OS: PCD, extrapyramidal Motor syndromes, LEMS, Focal epilepsy, POMA, Chronic gastrointestinal Pseudoobstruction, retinopathy	FT: SCLC, neuroblastoma OT: Prostate carcinoma, Bladder carcinoma, Ovarian carcinoma, Breast carcinoma, Pancreas carcinoma, Gastrointestinal malignant tumors
Anti-Ri (ANNA-2,Anti-neuronal Nuclear auto-Antibody, type 2)	NOVA , Ri/NOVA1,RNA binding Proteins (55 kDa and 80 kDa) L: Cell nuclei of neurons In the central nervous system	FS: POMA OS: PCD, rhombencephalitis	FT: SCLC, breast carcinoma OT: Hodgkin's lymphoma, Non-Hodgkin's lymphoma, Fast-growing brain stem tumor, ovarian carcinoma
Anti-Yo (PCA-1, Purkinje cell Antibody 1)	CDR2, CDR62 , Yo antigen, signal transduction proteins (34 kDa and 62 kDa) L: Cytoplasm (rough ER, Golgi apparatus, cytoplasm membrane) of Purkinje cells of the cerebellum	FS: PCD OS: POMA	FT: Ovarian, breast, uterine carcinoma OT: Adenocarcinoma of the oesophagus,gall bladder carcinoma, prostate carcinoma, Hodgkin's lymphoma, Non-Hodgkin's lymphoma,thymoma
PCA-2	Purkinje cell protein (280 kDa)	FS: Encephalitis, neuropathy	FT: SCLC
Anti-Tr (PCA-Tr)	DNER (Delta/Notch-like Epidermal Growth Factor- Related Receptor)	FS: PCD	FT: Hodgkin's lymphoma
Anti-SOX1	SOX1 protein	FS: LEMS, PCD	FT: SCLC
Anti-PNMA1 (Ma1)	Ma protein (37 kDa)	FS: Rhombencephalitis (brain stem), limbic encephalitis	FT: Breast carcinoma OT: Various tumors
Anti-PNMA2 (Ma2/Ta)	Ma protein (40 kDa) L: Neuronal nucleoli	FS: Rhombencephalitis, PLE, brain stem Encephalopathy OS: POMA, PCD, focal epi- Lepsy, extrapyramidal motor Syndromes, retinopathy	FT: Germinal carcinoma of the Testis (seminoma) OT: Non-small-cell lung carcinoma, parotid gland carcinoma, breast carcinoma, ovarian carcinoma, colon carcinoma, kidney carcinoma,lymphoma
Anti-GAD	Glutamic acid decarboxylase (65 kDa and 67 kDa)	FS: SPS	FT: SCLC Breast carcinoma, Colon carcinoma
Anti- amphiphysin	Amphiphysin (128 kDa protein) L: Membrane of the Synaptic vesicles	FS: SPS OS: Myasthenic syndrome, Polyneuropathy(auto- Nomous, sensory, sensory- Motor), encephalomyelitis With rigidity, cerebellar	FT: Breast carcinoma, SCLC OT: Thymoma, Hodgkin's lymphoma, Colon carcinoma
Anti-CV-2 (Anti-CRMP5)	CV2/CRMP5 (66 kDa protein) L: Cytoplasm of oligo- dendrocytes	FS: Limbic encephalitis OS: PCD, polyneuropathy (autonomous, sensory, Sensory-motor), retinopathy, Uveitis, myasthenic Syndrome, chronic gastro- Intestinal pseudoobstruction, Chorea, POMA, romb- Encephalitis, focal epilepsy	FT: SCLC, thymoma OT: Uterine sarcoma
Anti-AQP-4 (NMO IgG)	Aquaporin-4 protein	Neuromyelitis optica (NMO), LETM, rec. ON	
Anti-NMDA receptors	Extracellular domain of The NR1 subunit of the receptor	Anti-glutamate receptor (type NMDA) encephalitis	Teratoma (ovary, testis)
Anti-AMPA Receptors (GluR1 and GluR2)	GluR1 and GluR2 Subunits of the receptor (each approx.. 100 kDa)	Limbic encephalitis	Breast carcinoma, thymoma, lung carcinoma

Anti-mGluR1	Metabotropic glutamate receptor (approx.. 140kDa)	Cerebellar degeneration	Hodgkin's lymphoma
GABA_B receptors	Extracellular domain of The GABA _B subunit of the receptor	Limbic encephalitis	SCLC
Anti-LG1	Protein (60 kDa) Associated with voltage-Gated potassium channels (VGKC)	Limbic encephalitis	SCLC, ovarian teratoma, thymoma, various tumors
Anti-CASPR2	Protein associated with Voltage-gated potassium Channels (VGKC)	Limbic encephalitis, neuro-Myotonia, Morvan's syndrome	Thymoma, uterine carcinoma
Anti-recoverin	Recoverin (23 kDa protein)	FS: Retinopathy	FT: SCLC
Anti-titin	Titin	FS: Myasthenia gravis	FT: Thymoma

Flow chart for diagnosis of PNS

