10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-LRRK2 Picoband Antibody

Catalog # ABO11972

Specification

Anti-LRRK2 Picoband Antibody - Product Information

Application	**WB**
Primary Accession	Q5S007
Host	**Rabbit**
Reactivity	**Human, Mouse, Rat**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Leucine-rich repeat serine/threonine-protein kinase 2(LRRK2) detection. Tested with WB in Human;Mouse;Rat.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-LRRK2 Picoband Antibody - Additional Information

Gene ID 120892

Other Names
Leucine-rich repeat serine/threonine-protein kinase 2, 2.7.11.1, Dardarin, LRRK2, PARK8

Calculated MW
286103 MW KDa

Application Details
Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat

Subcellular Localization
Membrane; Peripheral membrane protein. Cytoplasm. Perikaryon. Mitochondrion. Golgi apparatus. Cell projection, axon. Cell projection, dendrite. Endoplasmic reticulum . Cytoplasmic vesicle, secretory vesicle, synaptic vesicle membrane ; Peripheral membrane protein ; Cytoplasmic side . Endosome . Lysosome . Mitochondrion outer membrane . Mitochondrion inner membrane . Mitochondrion matrix . Predominantly associated with intracytoplasmic vesicular and membranous structures (By similarity). Localized in the cytoplasm and associated with cellular membrane structures. Predominantly associated with the mitochondrial outer membrane of the mitochondria. Colocalized with RAB29 along tubular structures emerging from Golgi apparatus. Localizes in intracytoplasmic punctate structures of neuronal perikarya and dendritic and axonal processes. .

Tissue Specificity
Expressed in the brain. Expressed in pyramidal neurons in all cortical laminae of the visual cortex, in neurons of the substantia nigra pars compacta and caudate putamen (at protein level). Expressed throughout the adult brain, but at a lower level than in heart and liver. Also expressed in placenta, lung, skeletal muscle, kidney and pancreas. In the brain, expressed in the cerebellum, cerebral cortex, medulla, spinal cord occipital pole, frontal lobe, temporal lobe and putamen. Expression is particularly high in brain dopaminoceptive areas. .

Protein Name
Leucine-rich repeat serine/threonine-protein kinase 2

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

Immunogen
E.coli-derived human LRRK2 recombinant protein (Position: E10-L350). Human LRRK2 shares 82% amino acid (aa) sequence identity with mouse LRRK2.

Purification
Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins

Storage	**At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.**

Sequence Similarities
Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family.

Anti-LRRK2 Picoband Antibody - Protein Information

Name LRRK2

Synonyms PARK8

Function
Serine/threonine-protein kinase which phosphorylates a broad range of proteins involved in multiple processes such as neuronal plasticity, innate immunity, autophagy, and vesicle trafficking (PubMed:17114044, PubMed:20949042, PubMed:21850687, PubMed:22012985, PubMed:23395371, PubMed:24687852, PubMed:25201882, PubMed:26014385, PubMed:26824392, PubMed:27830463, PubMed:28720718, PubMed:29125462, PubMed:29127255, PubMed:29212815, PubMed:30398148, PubMed:30635421). Is a key regulator of RAB GTPases by regulating the GTP/GDP exchange and interaction partners of RABs through phosphorylation (PubMed:26824392, PubMed:28720718, PubMed:29125462, PubMed:29127255, PubMed:<a href="http://www.uniprot.org/citations/29212815"

target="_blank">29212815, PubMed:30398148, PubMed:30635421). Phosphorylates RAB3A, RAB3B, RAB3C, RAB3D, RAB5A, RAB5B, RAB5C, RAB8A, RAB8B, RAB10, RAB12, RAB29, RAB35, and RAB43 (PubMed:23395371, PubMed:26824392, PubMed:28720718, PubMed:29125462, PubMed:29127255, PubMed:29212815, PubMed:30398148, PubMed:30635421, PubMed:38127736). Regulates the RAB3IP-catalyzed GDP/GTP exchange for RAB8A through the phosphorylation of 'Thr-72' on RAB8A (PubMed:26824392). Inhibits the interaction between RAB8A and GDI1 and/or GDI2 by phosphorylating 'Thr-72' on RAB8A (PubMed:26824392). Regulates primary ciliogenesis through phosphorylation of RAB8A and RAB10, which promotes SHH signaling in the brain (PubMed:29125462, PubMed:30398148). Together with RAB29, plays a role in the retrograde trafficking pathway for recycling proteins, such as mannose-6-phosphate receptor (M6PR), between lysosomes and the Golgi apparatus in a retromer-dependent manner (PubMed:23395371). Regulates neuronal process morphology in the intact central nervous system (CNS) (PubMed:17114044). Plays a role in synaptic vesicle trafficking (PubMed:24687852). Plays an important role in recruiting SEC16A to endoplasmic reticulum exit sites (ERES) and in regulating ER to Golgi vesicle-mediated transport and ERES organization (PubMed:25201882). Positively regulates autophagy through a calcium-dependent activation of the CaMKK/AMPK signaling pathway (PubMed:22012985). The process involves activation of nicotinic acid adenine dinucleotide phosphate (NAADP) receptors, increase in lysosomal pH, and calcium release from lysosomes (PubMed:22012985). Phosphorylates PRDX3 (PubMed:21850687). By phosphorylating APP on 'Thr-743', which promotes the production and the nuclear translocation of the APP intracellular domain (AICD), regulates dopaminergic neuron apoptosis (PubMed:28720718). Acts as a positive regulator of innate immunity by mediating phosphorylation of RIPK2 downstream of NOD1 and NOD2, thereby enhancing RIPK2 activation (PubMed:27830463). Independent of its kinase activity, inhibits the proteasomal degradation of MAPT, thus promoting MAPT oligomerization and secretion (PubMed:26014385). In addition, has GTPase activity via its Roc domain which regulates LRRK2 kinase activity (PubMed:18230735, PubMed:26824392, PubMed:28720718, PubMed:29125462, PubMed:29212815). Recruited by RAB29/RAB7L1 to overloaded lysosomes where it phosphorylates and stabilizes RAB8A and RAB10 which promote lysosomal content release and suppress lysosomal enlargement through the EHBP1 and EHBP1L1 effector proteins (PubMed:30209220, PubMed:<a href="http://www.uniprot.org/citations/38227290"

target="_blank">38227290).

Cellular Location
Cytoplasmic vesicle. Perikaryon. Golgi apparatus membrane; Peripheral membrane protein. Cell projection, axon. Cell projection, dendrite. Endoplasmic reticulum membrane; Peripheral membrane protein. Cytoplasmic vesicle, secretory vesicle, synaptic vesicle membrane. Endosome {ECO:0000250|UniProtKB:Q5S006}. Lysosome Mitochondrion outer membrane; Peripheral membrane protein. Cytoplasm, cytoskeleton. Cytoplasmic vesicle, phagosome {ECO:0000250|UniProtKB:Q5S006}. Note=Colocalized with RAB29 along tubular structures emerging from Golgi apparatus (PubMed:23395371, PubMed:38127736). Localizes to endoplasmic reticulum exit sites (ERES), also known as transitional endoplasmic reticulum (tER) (PubMed:25201882). Detected on phagosomes and stressed lysosomes but not detected on autophagosomes induced by starvation (By similarity). Recruitment to stressed lysosomes is dependent on the ATG8 conjugation system composed of ATG5, ATG12 and ATG16L1 and leads to lysosomal stress-induced activation of LRRK2 (By similarity) {ECO:0000250|UniProtKB:Q5S006, ECO:0000269|PubMed:23395371, ECO:0000269|PubMed:25201882, ECO:0000269|PubMed:38127736}

Tissue Location
Expressed in pyramidal neurons in all cortical laminae of the visual cortex, in neurons of the substantia nigra pars compacta and caudate putamen (at protein level). Expressed in neutrophils (at protein level) (PubMed:29127255). Expressed in the brain. Expressed throughout the adult brain, but at a lower level than in heart and liver. Also expressed in placenta, lung, skeletal muscle, kidney and pancreas. In the brain, expressed in the cerebellum, cerebral cortex, medulla, spinal cord occipital pole, frontal lobe, temporal lobe and putamen. Expression is particularly high in brain dopaminoceptive areas.

Anti-LRRK2 Picoband Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-LRRK2 Picoband Antibody - Images

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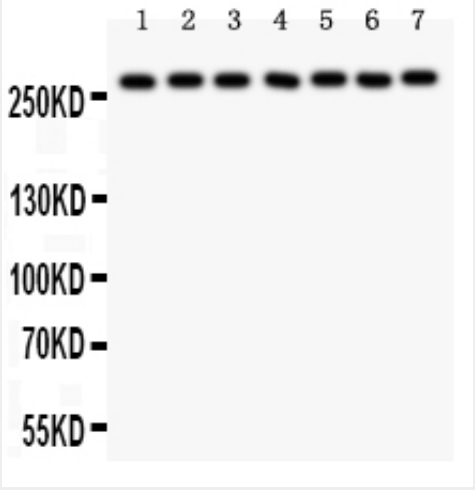

Anti- LRRK2 Picoband antibody, ABO11972, Western blottingAll lanes: Anti LRRK2 (ABO11972) at 0.5ug/mlLane 1: Rat Brain Tissue Lysate at 50ugLane 2: Mouse Brain Tissue Lysate at 50ugLane 3: Rat Liver Tissue Lysate at 50ugLane 4: U87 Whole Cell Lysate at 40ugLane 5: NEURO Whole Cell Lysate at 40ugLane 6: A549 Whole Cell Lysate at 40ugLane 7: SMMC Whole Cell Lysate at 40ugPredicted bind size: 286KDObserved bind size: 286 KD

Anti-LRRK2 Picoband Antibody - Background

Leucine-rich repeat kinase 2 (LRRK2), also known as dardarin, is anenzyme that in humans is encoded by the PARK8 gene. It is a member of the leucine-rich repeat kinase family. This gene is mapped to 12q12. The protein is present largely in the cytoplasm but also associates with the mitochondrial outer membrane. Expression of mutant LRRK2 induced apoptotic cell death in neuroblastoma cells and in mouse cortical neurons. It has been determined that LRRK2 possesses mixed-lineage kinase activity, and LRRK2 also showed autophosphorylation activity. Whatâ€™s more, LRRK2 has an affinity for lipids or lipid-associated proteins and may play a role in the biogenesis or regulation of membranous intracellular structures in the brain. It is also an IFNG target gene that may be involved in signaling pathways relevant to Crohn disease.