abcam

Product datasheet

Anti-LRRK2 (phospho S973) antibody [MJF-R12 (37-1)] - BSA and Azide free ab250490

Recombinant RabMAb

2 Images

Overview

Product name	Anti-LRRK2 (phospho S973) antibody [MJF-R12 (37-1)] - BSA and Azide free
Description	Rabbit monoclonal [MJF-R12 (37-1)] to LRRK2 (phospho S973) - BSA and Azide free
Host species	Rabbit
Tested applications	**Suitable for:** WB **Unsuitable for:** ICC/IF,IHC-P or IP
Species reactivity	**Reacts with:** Human
Immunogen	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
General notes	ab250490 is the carrier-free version of **ab181364**. This antibody was developed with support of The Michael J. Fox Foundation (MJFF) with the assistance of a consortium of investigators to help accelerate LRRK2 research. LRRK2 (Leucine-rich repeat kinase 2, dardarin) is a multi-domain protein belonging to the ROCO family of proteins that contains a kinase and GTPase domain among its many protein interaction domains. LRRK2 is mutated in a significant number of Parkinson's disease(PD) patients. Mutations in this gene account for 4% of PD, and are observed in 1% of sporadic PD patients. The most common mutation replaces glycine 2019 with a serine that results in increased LRRK2 kinase activity. This indicates that inhibitors of LRRK2kinase activity might be of therapeutic benefit for the treatment of Parkinson’s disease and has stimulated much activity in this field of research. Based upon mass spectrometry findings, a number of other residues within LRRK2 have also been found to be phosphorylated as well. It is of note that phosphorylation of Serine 973 is not thought to be the result of autophosphorylation of the kinase though currently, the physiological relevance of these phospho-sites is not clear. Thus with the generation of this phospho-specific antibody, it is MJFF's hope that investigators may have at hand a critical tool to assist in their research endeavors that might thereby lend further clarity to the field of LRRK2 and its role in PD pathogenesis. Acknowledgements: The Michael J. Fox Foundation would like to acknowledge the assistance of the following laboratories and individuals, whose input, guidance and assistance in testing all phospho specific LRRK2 antibodies was critical: • The Laboratory of Dr. Dario Alessi (University of Dundee) -- Paul Davies, PhD • The Laboratory of Dr. Mark Cookson (National Institute on Aging) -- Alexandra Beilina, PhD • The Laboratory of Dr. Johannes Gloeckner (Helmholtz Zentrum Munchen)

• The Laboratory of Dr. Takeshi Iwatsubo (University of Tokyo) -- Genta Ito, PhD
• The Laboratory of Dr. Jeremy Nichols (The Parkinson's Institute)
• The Laboratory of Dr. Andrew West (University of Alabama)

Our **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency.

This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our **conjugation kits** for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

This product is a recombinant monoclonal antibody, which offers several advantages including:
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free production

For more information **see here**.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

This antibody was developed with support from The Michael J. Fox Foundation.

THE MICHAEL J. FOX FOUNDATION
FOR PARKINSON'S RESEARCH

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.
Storage buffer	pH: 7.2 Constituent: PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	MJF-R12 (37-1)
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab250490 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		Use at an assay dependent concentration. Predicted molecular weight: 286 kDa.

Application notes Is unsuitable for ICC/IF,IHC-P or IP.

Target

Function Positively regulates autophagy through a calcium-dependent activation of the CaMKK/AMPK signaling pathway. The process involves activation of nicotinic acid adenine dinucleotide phosphate (NAADP) receptors, increase in lysosomal pH, and calcium release from lysosomes. 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. Regulates neuronal process morphology in the intact central nervous system (CNS). Plays a role in synaptic vesicle trafficking. Phosphorylates PRDX3. Has GTPase activity. May play a role in the phosphorylation of proteins central to Parkinson disease.

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.

Involvement in disease Parkinson disease 8

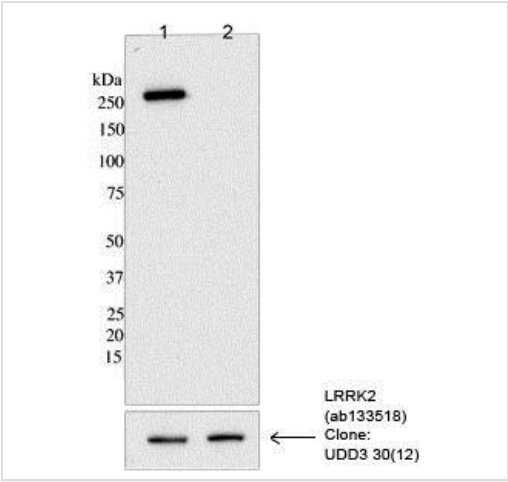
Sequence similarities Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family.
Contains 12 LRR (leucine-rich) repeats.
Contains 1 protein kinase domain.
Contains 1 Roc domain.
Contains 7 WD repeats.

Domain The seven-bladed WD repeat region is critical for synaptic vesicle trafficking and mediates interaction with multiple vesicle-associated presynaptic proteins.
The Roc domain mediates homodimerization and regulates kinase activity.

Post-translational modifications Autophosphorylated.

Cellular localization Membrane. Cytoplasm. Perikaryon. Mitochondrion. Golgi apparatus. Cell projection, axon. Cell projection, dendrite. Endoplasmic reticulum. Cytoplasmic vesicle, secretory vesicle, synaptic vesicle membrane. 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.

Images



Western blot - Anti-LRRK2 (phospho S973) antibody [MJF-R12 (37-1)] - BSA and Azide free (ab250490)

Data kindly provided by Drs. Dario Alessi and Paul Davies, The University of Dundee.

All lanes : Anti-LRRK2 (phospho S973) antibody [MJF-R12 (37-1)] (**ab181364**) at 1/1000 dilution

Lane 1 : Lysate from HEK293 cells expressing LRRK2

Lane 2 : Lysate from HEK293 cells expressing LRRK2(S973A)

Predicted band size: 286 kDa

This data was developed using **ab181364**, the same antibody clone in a different buffer formulation.

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