

Product datasheet

Anti-LRRK2 (phospho T1410) antibody [MJFR4-25-5] ab140107

Recombinant RabMAb

[2 References](#) [2 Images](#)

Overview

Product name	Anti-LRRK2 (phospho T1410) antibody [MJFR4-25-5]
Description	Rabbit monoclonal [MJFR4-25-5] to LRRK2 (phospho T1410)
Host species	Rabbit
Tested applications	Suitable for: WB
Species reactivity	Reacts with: Mouse, Rat, Human
Immunogen	A synthetic phospho-peptide corresponding to residues surrounding Threonine 1410 of Human LRRK2 (UniProt Q5S007).
Positive control	LRRK2 wild type transfected 293T in vitro auto-phosphorylation.
General notes	<p>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.</p> <p>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 LRRK2 kinase 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.</p> <p>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.</p> <p>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 phosphospecific LRRK2 antibodies was critical:</p> <ul style="list-style-type: none"> • 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 RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to [RabMab[®] patents](#).

This product is a [recombinant rabbit monoclonal antibody](#).

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at -20°C.
Storage buffer	Preservative: 0.01% Sodium azide Constituents: 9% PBS, 40% Glycerol, 0.05% BSA, 50% Tissue culture supernatant
Purity	Tissue culture supernatant
Clonality	Monoclonal
Clone number	MJFR4-25-5
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab140107** 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		1/1000 - 1/5000. Predicted molecular weight: 286 kDa.

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
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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 dopaminergic 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.

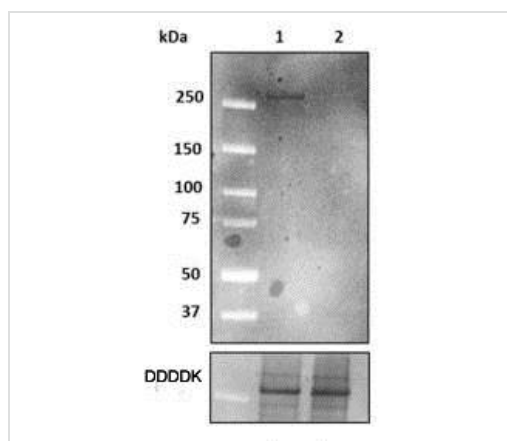
Post-translational modifications

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



All lanes : Anti-LRRK2 (phospho T1410) antibody [MJFR4-25-5] (ab140107) at 1/1000 dilution

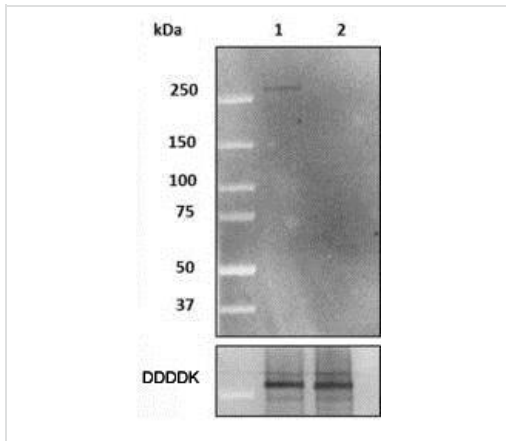
Lane 1 : LRRK2 wild type transfected 293T in vitro auto-phosphorylation

Lane 2 : LRRK2 T1410A in vitro auto-phosphorylation

Predicted band size: 286 kDa

Western blot - Anti-LRRK2 (phospho T1410) antibody [MJFR4-25-5] (ab140107)

This image is courtesy of Drs. Cookson and Beilina (National Institute on Aging)



Western blot - Anti-LRRK2 (phospho T1410)
antibody [MJFR4-25-5] (ab140107)

This image is courtesy of Drs. Cookson and Beilina
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All lanes : Anti-LRRK2 (phospho T1410) antibody [MJFR4-25-5]
(ab140107) at 1/5000 dilution

Lane 1 : LRRK2 wild type transfected 293T in vitro auto-phosphorylation

Lane 2 : LRRK2 T1410A in vitro auto-phosphorylation

Predicted band size: 286 kDa

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