

Product datasheet

Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - BSA and Azide free ab218374

Recombinant RabMAb

3 Images

Overview

Product name	Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - BSA and Azide free
Description	Rabbit monoclonal [MJF-R16 (66-5)] to PARK7/DJ1 - BSA and Azide free
Host species	Rabbit
Tested applications	Suitable for: WB Unsuitable for: ICC/IF or IHC-P
Species reactivity	Reacts with: Human
Immunogen	Synthetic peptide within Human PARK7/DJ1 aa 100-200. The exact sequence is proprietary. Database link: Q99497
General notes	<p>ab218374 is the carrier-free version of ab169520 This format is designed for use in antibody labeling, including fluorochromes, metal isotopes, oligonucleotides, enzymes.</p> <p>Our carrier-free formats are supplied in a buffer free of BSA, sodium azide and glycerol for higher conjugation efficiency.</p> <p>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.</p> <p>Ab218374 is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm.</p> <p><i>Maxpar® is a trademark of Fluidigm Canada Inc.</i></p> <p>In recent years, a critical need in the Parkinson's Disease (PD) research community has been access to well-characterized antibodies directed against known PD-relevant proteins. The Michael J. Fox Foundation (MJFF) has supported this effort by partnering with Drs. Un Kang and David White (University of Chicago) to help accelerate PD research.</p> <p>DJ-1 is widely expressed in the adult mammal and highly conserved between species. Loss-of-function mutations in DJ-1 were recently identified in an autosomal recessive form of Parkinson's disease (PARK7). Among other roles, DJ-1 protects cells against oxidative stress. Oxidization of the cysteine 106 residue (C106) of DJ-1 occurs as a consequence oxidative stress, but is also necessary to fully activate DJ-1 functions. The oxidation state of DJ-1 C106 appears to lead to distinct roles for DJ-1 in the cellular response to oxidative stress. Oxidation of C106 to the sulfinic (-SO₂H) form has been implicated as a necessary step to achieve optimal protective functions of DJ-1, whereas oxidation to the sulfonic form (-SO₃H) results in the oxidative destabilization of DJ-1 structure. The sulfonic form has been identified as a major oxidized form in PD brains.</p>

With the generation of this critical research tool, MJFF hopes to ensure that the role of this modification can be further investigated by all researchers and the relevance of oxidized forms of DJ-1 can be more definitively examined in Parkinson's disease.

□

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

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](#).

Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough.

Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.

We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise[™] guarantee.

In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for.

We are also updating the applications & species that this product has been "predicted to work with," however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

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-R16 (66-5)
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab218374** 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: 20 kDa.
Application notes		Is unsuitable for ICC/IF or IHC-P.

Target

Function

Protects cells against oxidative stress and cell death. Plays a role in regulating expression or stability of the mitochondrial uncoupling proteins SLC25A14 and SLC25A27 in dopaminergic neurons of the substantia nigra pars compacta and attenuates the oxidative stress induced by calcium entry into the neurons via L-type channels during pacemaking. Eliminates hydrogen peroxide and protects cells against hydrogen peroxide-induced cell death. May act as an atypical peroxiredoxin-like peroxidase that scavenges hydrogen peroxide. Following removal of a C-terminal peptide, displays protease activity and enhanced cytoprotective action against oxidative stress-induced apoptosis. Stabilizes NFE2L2 by preventing its association with KEAP1 and its subsequent ubiquitination. Binds to OTUD7B and inhibits its deubiquitinating activity. Enhances RELA nuclear translocation. Binds to a number of mRNAs containing multiple copies of GG or CC motifs and partially inhibits their translation but dissociates following oxidative stress. Required for correct mitochondrial morphology and function and for autophagy of dysfunctional mitochondria. Regulates astrocyte inflammatory responses. Acts as a positive regulator of androgen receptor-dependent transcription. Prevents aggregation of SNCA. Plays a role in fertilization. Has no proteolytic activity. Has cell-growth promoting activity and transforming activity. May function as a redox-sensitive chaperone.

Tissue specificity

Highly expressed in pancreas, kidney, skeletal muscle, liver, testis and heart. Detected at slightly lower levels in placenta and brain. Detected in astrocytes, Sertoli cells, spermatogonia, spermatids and spermatozoa.

Involvement in disease

Defects in PARK7 are the cause of Parkinson disease type 7 (PARK7) [MIM:606324]. A neurodegenerative disorder characterized by resting tremor, postural tremor, bradykinesia, muscular rigidity, anxiety and psychotic episodes. PARK7 has onset before 40 years, slow progression and initial good response to levodopa. Some patients may show traits reminiscent of amyotrophic lateral sclerosis-parkinsonism/dementia complex (Guam disease).

Sequence similarities

Belongs to the peptidase C56 family.

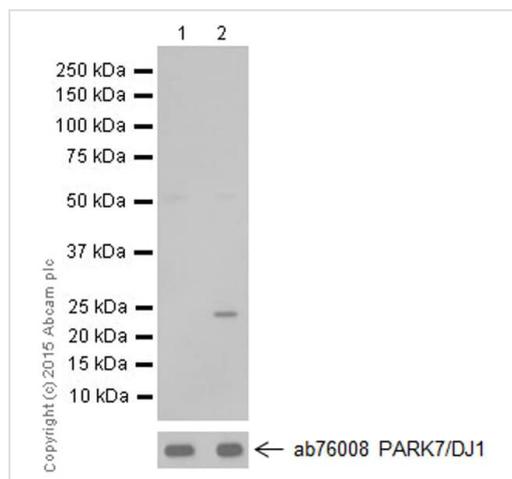
Post-translational modifications

Sumoylated on Lys-130 by PIAS2 or PIAS4; which is enhanced after ultraviolet irradiation and essential for cell-growth promoting activity and transforming activity.
Cys-106 is easily oxidized to sulfinic acid.
Undergoes cleavage of a C-terminal peptide and subsequent activation of protease activity in response to oxidative stress.

Cellular localization

Cytoplasm. Nucleus. Mitochondrion. Under normal conditions, located predominantly in the cytoplasm and, to a lesser extent, in the nucleus and mitochondrion. Translocates to the mitochondrion and subsequently to the nucleus in response to oxidative stress and exerts an increased cytoprotective effect against oxidative damage. Detected in tau inclusions in brains from neurodegenerative disease patients.

Images



Western blot - Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - BSA and Azide free (ab218374)

All lanes : Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - Oxidized ([ab169520](#)) at 1/10000 dilution (purified)

Lane 1 : Untreated HeLa whole cell lysate

Lane 2 : HeLa whole cell lysate treated with hydrogen peroxide

Lysates/proteins at 10 µg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/20000 dilution

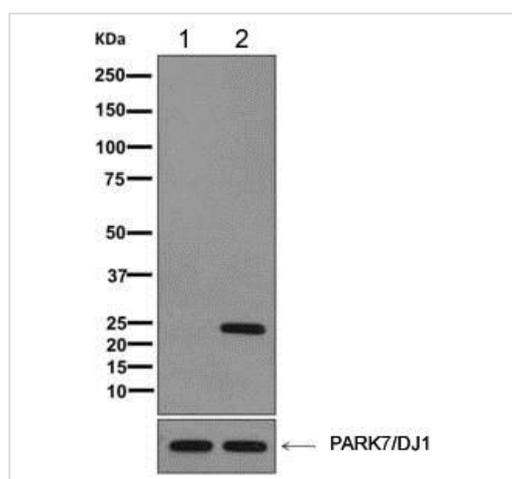
Predicted band size: 20 kDa

Observed band size: 23 kDa

[why is the actual band size different from the predicted?](#)

This data was developed using [ab169520](#), the same antibody clone in a different buffer formulation.

Blocking and dilution buffer: 5% NFDM/TBST.



Western blot - Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - BSA and Azide free (ab218374)

This image is courtesy of Drs. Un Kang and David White (University of Chicago)

All lanes : Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - Oxidized ([ab169520](#)) at 1/1000 dilution (Unpurified)

Lane 1 : HeLa cell lysate, untreated

Lane 2 : HeLa cell lysate, treated with hydrogen peroxide

Lysates/proteins at 10 µg per lane.

Secondary

All lanes : Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 20 kDa

This data was developed using [ab169520](#), the same antibody clone in a different buffer formulation.

[ab169520](#) highlights the presence or absence of the oxidized form

of this protein; an antibody directed against total PARK7/DJ1 illustrates the presence of PARK7/DJ1 protein in both lanes.

Why choose a recombinant antibody?



- Research with confidence**
Consistent and reproducible results
- Long-term and scalable supply**
Recombinant technology
- Success from the first experiment**
Confirmed specificity
- Ethical standards compliant**
Animal-free production

Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - BSA and Azide free (ab218374)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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