Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - Oxidized

ab169520

Overview

Product name
Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - Oxidized

Description
Rabbit monoclonal [MJF-R16 (66-5)] to PARK7/DJ1 - Oxidized

Host species
Rabbit

Specificity
This antibody detects the oxidised form of the Park7 protein.

Tested applications
Suitable for: WB
Unsuitable for: ICC/IF or IHC-P

Species reactivity
Reacts with: Human

Immunogen
Synthetic peptide corresponding to Human PARK7/DJ1 aa 100-200.
Database link: Q99497

Positive control
HeLa whole cell lysate (ab150035), treated with hydrogen peroxide.

General notes
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.

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. Oxidation 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 sulfenic (-SOH) 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.

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.

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

We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team.

This product is a recombinant rabbit monoclonal antibody.

Properties

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<thead>
<tr>
<th>Form</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage buffer</td>
<td>Preservative: 0.01% Sodium azide</td>
</tr>
<tr>
<td></td>
<td>Constituents: 50% Glycerol, 0.05% BSA</td>
</tr>
<tr>
<td>Purity</td>
<td>Protein A purified</td>
</tr>
<tr>
<td>Clonality</td>
<td>Monoclonal</td>
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<tr>
<td>Clone number</td>
<td>MJF-R16 (66-5)</td>
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<tr>
<td>Isotype</td>
<td>IgG</td>
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</tbody>
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Applications

Our Abpromise guarantee covers the use of ab169520 in the following tested applications.

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

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Application notes

Is unsuitable for ICC/IF or IHC-P.

Target
**Function**


**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 sulfenic 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**
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?

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST
**Western blot - Anti-PARK7/DJ1 antibody [MJF-R16 (66-5)] - Oxidized (ab169520)**

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

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.

**Please note**: All products are “FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES”

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