

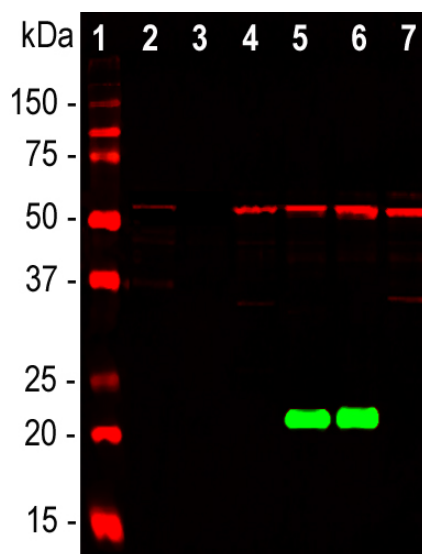
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HGNC Name: PARK7
UniProt: Q99497
RRID: AB_2572260
Immunogen: Full length recombinant human DJ1 expressed in and purified from *E. coli*.
Format: Purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN₃
Storage: Store at 4°C for short term, for longer term at -20°C
Recommended dilutions:
WB: 1:5,000. IF/IHC: 1:1,000

References:

1. Bandyopadhyay S, Cookson MR. Evolutionary and functional relationships within the DJ1 superfamily. *BMC Evol. Biol.* 4:6 (2004).
1. Nagakubo D, et al. DJ-1, a novel oncogene which transforms mouse NIH3T3 cells in cooperation with ras. *BBRC* 231:509-13 (1997).
2. Bonifati V, et al. Mutations in the DJ-1 gene associated with autosomal recessive early-onset Parkinsonism. *Science* 299:256-9 (2003).
3. Xu J, et al. The Parkinson's disease-associated DJ-1 protein is a transcriptional co-activator that protects against neuronal apoptosis. *Hum. Mol. Genet.* 14:1231-41 (2005).
4. Yokota T, et al. Down regulation of DJ-1 enhances cell death by oxidative stress, ER stress, and proteasome inhibition. *BBRC* 312:1342-8 (2003).
5. Taira T, et al. DJ-1 has a role in antioxidative stress to prevent cell death. *EMBO Rep.* 5:213-8 (2004).
6. Bonifati V, Oostra BA, and Heutink, P. Linking DJ-1 to neurodegeneration offers novel insights for understanding the pathogenesis of Parkinson's disease. *J. Mol. Med.* 82:163-74 (2004).
7. Aleyasin H, et al. The Parkinson's disease gene DJ-1 is also a key regulator of stroke-induced damage. *PNAS* 104:18748-53 (2007).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, ICC/IF, IHC	Mouse	IgG1	21kDa	Hu, Co

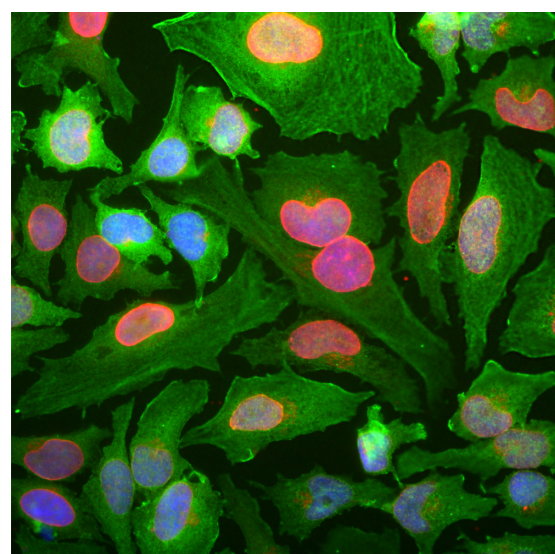


Western blot analysis of whole brain and cell lysates using mouse mAb against DJ1, MCA-4H4, dilution 1:5,000 in green. [1] protein standard, [2] rat brain, [3] mouse brain, [4] NIH-3T3, [5] HeLa, [6] HEK293, and [7] C6 cells. The MCA-DJ1 antibody detects protein with apparent molecular weight of 21kDa but only in human cell lines, since it does not recognize the rat or mouse DJ1 protein. The blot was simultaneously probed with chicken pAb to vimentin, [CPCA-Vim](#), dilution 1:5,000 in red, revealing a single band at about 50kDa present in all lanes, though at much lower levels in the tissue lysates.

Background:

DJ1, also known as PARK7, is a cytoplasmic protein that belongs to the DJ1/Thi1/Pfpl superfamily of proteins, which have a variety of functions in eukaryotes and bacteria (1). DJ1 was originally cloned as an oncogene that cooperatively transforms cells together with mutated H-ras (2). Mutations were then found in the DJ1 gene which were associated with rare forms of autosomal recessive early-onset Parkinson's disease, which led to DJ1 also being known as PARK7 (3). The function or functions of DJ1 are not well understood may include a redox-sensitive chaperone, a sensor for oxidative stress, and it may protect neurons against oxidative stress and cell death (4-6). Augmenting DJ1 activity might be a novel approach to treating chronic neurodegenerative illnesses such as Parkinson's disease and acute damage such as stroke (7).

The MCA-4H4 antibody was generated against full length recombinant human DJ1 expressed in and purified from *E. coli*. This antibody binds to human but not rodent DJ1. The rodent proteins are about 91% identical to the human, a relatively low degree of conservation. The antibody works well for western blotting and for IF, ICC and IHC (see data under "Additional Info" tab). We also supply a rabbit polyclonal antibody to DJ1 [RPCA-DJ1](#) which was also raised against the recombinant human DJ1 but which does bind the rodent DJ1 homologue. While RPCA-DJ1 has general utility for studies of DJ1, MCA-4H4 can be used to identify transplanted human cells or transgenic expression of human DJ1 in rodents.



Immunofluorescent analysis of HeLa cells stained with mouse mAb to DJ1/Park7, MCA-4H4, dilution 1:1,000 in green, and costained with chicken pAb to lamin A/C, [CPCA-LaminAC](#), dilution 1:5,000 in red. MCA-4H4 antibody reveals strong cytoplasmic staining for DJ1 protein, while CPCA-LaminAC antibody produces strong staining of nuclear lamina.

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Abbreviation Key:

mAb—Monoclonal Antibody **pAb**—Polyclonal Antibody **WB**—Western Blot **IF**—Immunofluorescence **ICC**—Immunocytochemistry
IHC—Immunohistochemistry **E**—ELISA **Hu**—Human **Mo**—Monkey **Do**—Dog **Rt**—Rat **Ms**—Mouse **Co**—Cow **Pi**—Pig **Ho**—Horse **Ch**—Chicken
Dr—*D. rerio* **Dm**—*D. melanogaster* **Sm**—*S. mutans* **Ce**—*C. elegans* **Sc**—*S. cerevisiae* **Sa**—*S. aureus* **Ec**—*E. coli*.