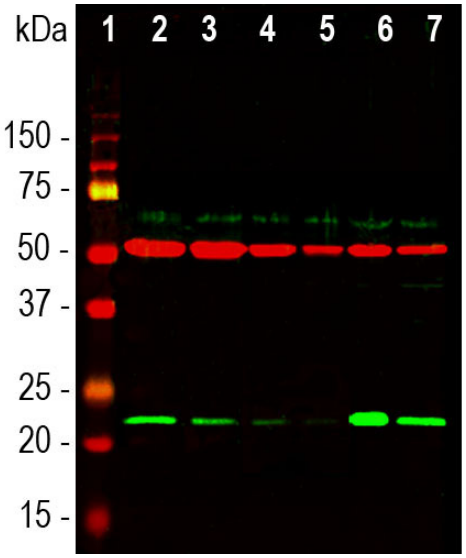
DJ1, DJ-1/PARK7 Rabbit Polyclonal Antibody

RPCA-DJ1

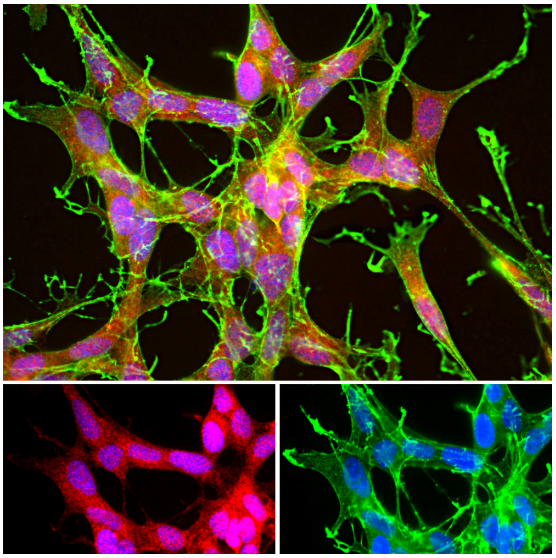
Ordering Information
Web *www.encorbio.com*
Email *admin@encorbio.com*
Phone *352-372-7022*
Fax *352-372-7066*

HGNC Name: *PARK7*
UniProt: *Q99497*
RRID: *AB_2737418*
Immunogen: *Full length recombinant human DJ1 expressed in and purified from E. coli.*
Format: *Crude serum plus 5mM azide*
Storage: *Store at 4°C for short term, for longer term at -20°C. Avoid freeze/thaw cycles.*
Recommended dilutions:
WB: 1:2,000. IF/IHC: 1:1,000 .

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Rabbit		21kDa	Hu, Rt, Ms



Western blot analysis analysis of different tissue and cell lysates using rabbit pAb against DJ1/Park7, RPCA-DJ1, dilution 1:2,000 in green. [1] protein standard, [2] rat brain, [3] mouse brain, [4] rat embryonic neuron-glial cells, [5] NIH-3T3, [6] HEK293, and [7] HeLa cells. RPCA-DJ1 antibody detects protein with apparent molecular weight of 21kDa in all preparations with different level of expression. The blot was simultaneously probed with mouse mAb to β-tubulin, MCA-1B12, dilution 1;10,000 in red, revealing a single band at about 50kDa corresponding to the β-tubulin protein.



Immunofluorescent analysis of SH-SY5Y cells stained with rabbit pAb against DJ1/Park7, RPCA-DJ1, dilution 1:1,000 in red, and costained with EnCor mouse mAb to actin, MCA-5J11, dilution 1:200 in green. The blue is Hoechst staining of nuclear DNA. The RPCA-DJ1 antibody reveals strong cytoplasmic staining for DJ1 protein, while the actin antibody labels the submembranous actin-rich cytoskeleton, stress fibers and bundles of actin associated with cell adhesion sites.

Background:

DJ1, also known as PARK7, is a cytoplasmic protein that belongs to the DJ1/ThiJ/PfpI 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 RPCA-DJ1 antibody was generated against full length recombinant human DJ1 expressed in and purified from *E. coli*. This antibody binds to the human, bovine, rat and mouse DJ1 homologues. The bovine protein is about 96% identical to the human protein, while the rodent proteins are about 91% similar. We also supply a mouse monoclonal antibody to DJ1 MCA-4H4 which was also raised against the recombinant human DJ1 but which does not 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.

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).

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.