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Goat Anti-PARK7 / DJ-1 Antibody

Peptide-affinity purified goat antibody
Catalog # AF1787a

Specification

Goat Anti-PARK7 / DJ-1 Antibody - Product Information

Application	**WB, IF, IHC**
Primary Accession	Q99497
Other Accession	NP_009193, 11315, 57320 (mouse), 117287 (rat)
Reactivity	**Human, Mouse, Rat**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**19891**

Goat Anti-PARK7 / DJ-1 Antibody - Additional Information

Gene ID 11315

Other Names
Protein DJ-1, 3.4.-.-, Oncogene DJ1, Parkinson disease protein 7, PARK7

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-PARK7 / DJ-1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-PARK7 / DJ-1 Antibody - Protein Information

Name PARK7 (HGNC:16369)

Function
Multifunctional protein with controversial molecular function which plays an important role in cell protection against oxidative stress and cell death acting as oxidative stress sensor and redox-sensitive chaperone and protease (PubMed:17015834, PubMed:20304780, PubMed:18711745, PubMed:<a href="http://www.uniprot.org/citations/12796482"

target="_blank">12796482, PubMed:19229105, PubMed:25416785, PubMed:26995087, PubMed:28993701). It is involved in neuroprotective mechanisms like the stabilization of NFE2L2 and PINK1 proteins, male fertility as a positive regulator of androgen signaling pathway as well as cell growth and transformation through, for instance, the modulation of NF-kappa-B signaling pathway (PubMed:12612053, PubMed:15502874, PubMed:14749723, PubMed:17015834, PubMed:21097510, PubMed:18711745). Has been described as a protein and nucleotide deglycase that catalyzes the deglycation of the Maillard adducts formed between amino groups of proteins or nucleotides and reactive carbonyl groups of glyoxals (PubMed:25416785, PubMed:28596309). But this function is rebuted by other works (PubMed:27903648, PubMed:31653696). As a protein deglycase, repairs methylglyoxal- and glyoxal-glycated proteins, and releases repaired proteins and lactate or glycolate, respectively. Deglycates cysteine, arginine and lysine residues in proteins, and thus reactivates these proteins by reversing glycation by glyoxals. Acts on early glycation intermediates (hemithioacetals and aminocarbinols), preventing the formation of advanced glycation endproducts (AGE) that cause irreversible damage (PubMed:25416785, PubMed:28013050, PubMed:26995087). Also functions as a nucleotide deglycase able to repair glycated guanine in the free nucleotide pool (GTP, GDP, GMP, dGTP) and in DNA and RNA. Is thus involved in a major nucleotide repair system named guanine glycation repair (GG repair), dedicated to reversing methylglyoxal and glyoxal damage via nucleotide sanitization and direct nucleic acid repair (PubMed:28596309). Protects histones from adduction by methylglyoxal, controls the levels of methylglyoxal- derived argininine modifications on chromatin (PubMed:30150385). Able to remove the glycations and restore histone 3, histone glycation disrupts both local and global chromatin architecture by altering histone-DNA interactions as well as histone acetylation and ubiquitination levels (PubMed:30150385, PubMed:30894531). Displays a very low glyoxalase activity that may reflect its deglycase activity (PubMed:22523093, PubMed:31653696, PubMed:28993701). Eliminates hydrogen peroxide and protects cells against hydrogen peroxide-induced cell death (PubMed:16390825). Required for correct mitochondrial morphology and function as well as for autophagy of dysfunctional mitochondria (PubMed:19229105, PubMed:16632486). 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 (PubMed:18711745). Regulates astrocyte inflammatory responses, may modulate lipid rafts-dependent endocytosis in astrocytes and neuronal cells (PubMed:<a href="http://www.uniprot.org/citations/23847046"

target="_blank">23847046). In pancreatic islets, involved in the maintenance of mitochondrial reactive oxygen species (ROS) levels and glucose homeostasis in an age- and diet dependent manner. Protects pancreatic beta cells from cell death induced by inflammatory and cytotoxic setting (By similarity). Binds to a number of mRNAs containing multiple copies of GG or CC motifs and partially inhibits their translation but dissociates following oxidative stress (PubMed:18626009). Metal-binding protein able to bind copper as well as toxic mercury ions, enhances the cell protection mechanism against induced metal toxicity (PubMed:23792957). In macrophages, interacts with the NADPH oxidase subunit NCF1 to direct NADPH oxidase-dependent ROS production, and protects against sepsis (By similarity).

Cellular Location
Cell membrane {ECO:0000250|UniProtKB:Q99LX0}; Lipid-anchor {ECO:0000250|UniProtKB:Q99LX0}. Cytoplasm. Nucleus. Membrane raft {ECO:0000250|UniProtKB:O88767}. Mitochondrion. Endoplasmic reticulum. Note=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 (PubMed:18711745). Detected in tau inclusions in brains from neurodegenerative disease patients (PubMed:14705119). Membrane raft localization in astrocytes and neuronal cells requires palmitoylation

Tissue Location
Highly expressed in pancreas, kidney, skeletal muscle, liver, testis and heart. Detected at slightly lower levels in placenta and brain (at protein level). Detected in astrocytes, Sertoli cells, spermatogonia, spermatids and spermatozoa. Expressed by pancreatic islets at higher levels than surrounding exocrine tissues (PubMed:22611253).

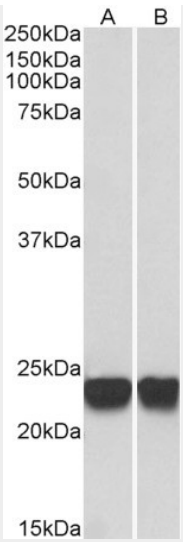
Goat Anti-PARK7 / DJ-1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

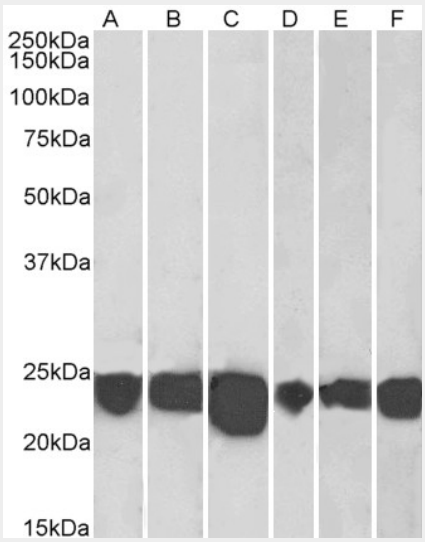
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-PARK7 / DJ-1 Antibody - Images

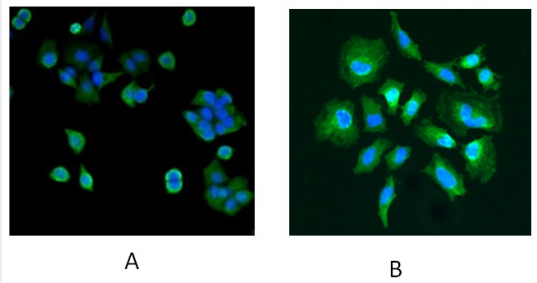
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EB05880 (0.001µg/ml) staining of HeLa (A) and Jurkat (B) lysates (35µg protein in RIPA buffer). Detected by chemiluminescence.

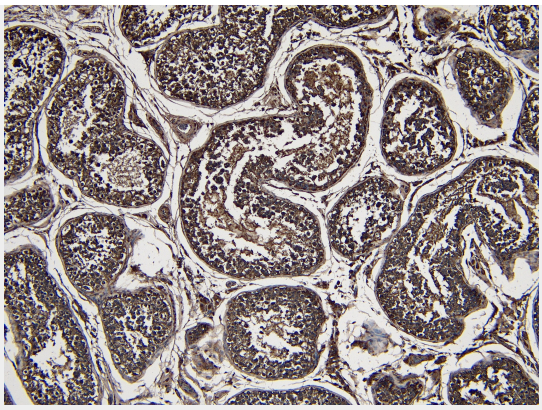


EB05880 (0.001µg/ml) staining of Human Cerebellum (A), Human Frontal Cortex (B), Human Hippocampus (C) Mouse Fetal Brain (D), Mouse Brain (E) and Rat Brain (F) lysates (35µg protein in RIPA buffer). Detected by chemiluminescence.

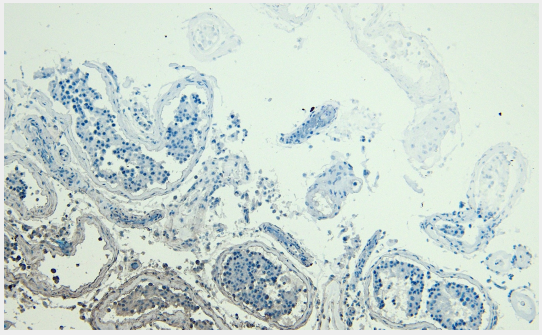


Immunofluorescence staining of MCF7 (A) and Hela (B) cells with 5ug/ml EB05880 antibody. Detected with Rabbit anti-goat IgG-Alexafluor488 antibody at 1:1000. Nuclei Counterstained with DAPI.

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EB05880 (7µg/ml) staining of paraffin embedded Human Testis. Heat induced antigen retrieval with citrate buffer pH 6, HRP-staining.



EB05880 Negative Control showing staining of paraffin embedded Human Testis, with no primary antibody.

Goat Anti-PARK7 / DJ-1 Antibody - Background

The product of this gene belongs to the peptidase C56 family of proteins. It acts as a positive regulator of androgen receptor-dependent transcription. It may also function as a redox-sensitive chaperone, as a sensor for oxidative stress, and it apparently protects neurons against oxidative stress and cell death. Defects in this gene are the cause of autosomal recessive early-onset Parkinson disease 7. Two transcript variants encoding the same protein have been identified for this gene.

Goat Anti-PARK7 / DJ-1 Antibody - References

Parkinson disease-associated DJ-1 is required for the expression of the glial cell line-derived neurotrophic factor receptor RET in human neuroblastoma cells. Foti R, et al. J Biol Chem, 2010 Jun 11. PMID 20395301.
DJ-1 modulates the p38 mitogen-activated protein kinase pathway through physical interaction with apoptosis signal-regulating kinase 1. Mo JS, et al. J Cell Biochem, 2010 May. PMID 20213747.
Multiple common variants for celiac disease influencing immune gene expression. Dubois PC, et al. Nat Genet, 2010 Apr. PMID 20190752.
BAG1 restores formation of functional DJ-1 L166P dimers and DJ-1 chaperone activity. Deeg S, et al. J Cell Biol, 2010 Feb 22. PMID 20156966.
Prognostic significance of nuclear DJ-1 expression in astrocytoma. Miyajima Y, et al. Anticancer Res, 2010 Jan. PMID 20150646.