DJ-1 Antibody – Polyclonal

PRODUCT OVERVIEW

Product Name	DJ-1, Polyclonal Antibody
Full Product Name	DJ-1 Polyclonal Antibody
Product Gene Name	anti-DJ-1 antibody
Clonality	Polyclonal
Molecular Weight	19,891 Da
OMIM	168600
3D Structure	ModBase 3D Structure for Q99497
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for anti-DJ-1 antibody	MBS8522335 is an antibody targeting DJ-1. Also known as DJ-1 Polyclonal Antibody.
Other Notes	Small volumes of anti-DJ-1 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for DJ-1. It may not necessarily be applicable to this product.

NCBI GI #	183227678
NCBI GeneID	11315
NCBI Accession #	NP_001116849.1
UniProt Primary Accession #	Q99497
UniProt Secondary Accession #	O14805; Q6DR95; Q7LFU2; B2R4Z1
UniProt Related Accession #	Q99497
GenBank Nucleotide #	NM_001123377.1
NCBI Official Full Name	protein/nucleic acid deglycase DJ-1
NCBI Official Synonym Full Names	Parkinsonism associated deglycase
NCBI Official Symbol	PARK7
NCBI Official Synonym Symbols	DJ1; DJ-1; GATD2; HEL-S-67p
UniProt Protein Name	Protein/nucleic acid deglycase DJ-1
UniProt Synonym Protein Names	Maillard deglycase
Protein Family	DJ-1 protein
UniProt Gene Name	PARK7
UniProt Synonym Gene Names	DJ-1
NCBI Protein Information	protein/nucleic acid deglycase DJ-1

NCBI Summary for DJ-1	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. [provided by RefSeq, Jul 2008]
UniProt Comments for DJ-1	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). Thus, functions as a protein deglycase that 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). Also displays an apparent glyoxalase activity that in fact reflects its deglycase activity (PubMed:22523093). Plays an important role in cell protection against oxidative stress and cell death acting as oxidative stress sensor and redox-sensitive chaperone and protease; functions probably related to its primary function (PubMed:17015834, PubMed:20304780, PubMed:18711745, PubMed:12796482, PubMed:19229105, PubMed:25416785, PubMed:26995087). 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). 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: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 (). 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 ().
Research Articles on DJ-1	**1.** Study shows the generation of oxDJ-1 in erythrocytes in early stage, unmedicated parkinson's disease (PD) patients and in non-human primates with PD symptoms. In addition, oxDJ-1 interacts with 20S proteasome in the erythrocytes of PD patients. The current findings suggest that oxidative stress is systemically present in PD patients and suggest that an early pathophysiological mechanism operates in PD.
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