10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-PARK7/DJ1 Picoband Antibody

Catalog # ABO11999

Specification

Anti-PARK7/DJ1 Picoband Antibody - Product Information

Application	**WB, IHC-P, ICC**
Primary Accession	Q99497
Host	**Rabbit**
Reactivity	**Human, Mouse, Rat**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Protein deglycase DJ-1(PARK7) detection. Tested with WB, IHC-P, ICC in Human;Mouse;Rat.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-PARK7/DJ1 Picoband Antibody - Additional Information

Gene ID 11315

Other Names
Protein deglycase DJ-1, DJ-1, 3.1.2.-, 3.5.1.-, Oncogene DJ1, Parkinson disease protein 7, PARK7 (HGNC:16369)

Calculated MW
19891 MW KDa

Application Details
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat

Immunocytochemistry , 0.5-1 µg/ml, Human, -
Western blot, 0.1-0.5 µg/ml, Human

Subcellular Localization
Cell membrane ; Lipid-anchor . Cytoplasm . Nucleus . Membrane raft . 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 (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 Specificity
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. .

Protein Name
Protein deglycase DJ-1

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

Immunogen
E.coli-derived human PARK7 recombinant protein (Position: A2-D189). Human PARK7 shares 91% amino acid (aa) sequence identity with both mouse and rat PARK7.

Purification
Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins

Storage

At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Sequence Similarities
Belongs to the peptidase C56 family.

Anti-PARK7/DJ1 Picoband 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:12796482, PubMed:17015834, PubMed:18711745, PubMed:19229105, PubMed:20304780, 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:14749723, PubMed:15502874, PubMed:17015834, PubMed:18711745, PubMed:21097510). 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:<a href="http://www.uniprot.org/citations/31653696"

target="_blank">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:26995087, PubMed:28013050). 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:28993701, PubMed:31653696). 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:16632486, PubMed:19229105). 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 (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

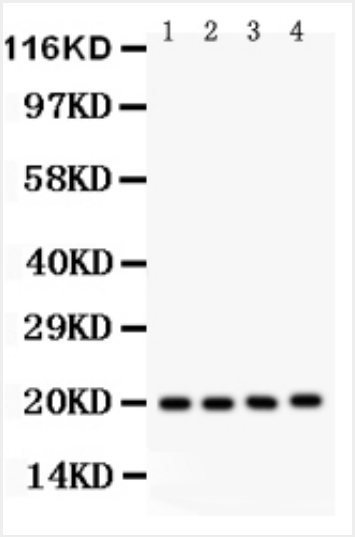
Tissue Location
Highly expressed in pancreas, kidney, skeletal muscle, liver, testis and heart. Detected at slightly lower levels in placenta and brain (at protein level). Detected in astrocytes, Sertoli cells, spermatogonia, spermatids and spermatozoa. Expressed by pancreatic islets at higher levels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

Anti-PARK7/DJ1 Picoband Antibody - Protocols

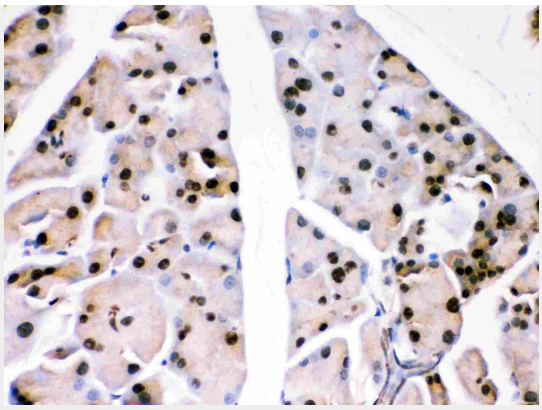
Provided below are standard protocols that you may find useful for product applications.

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

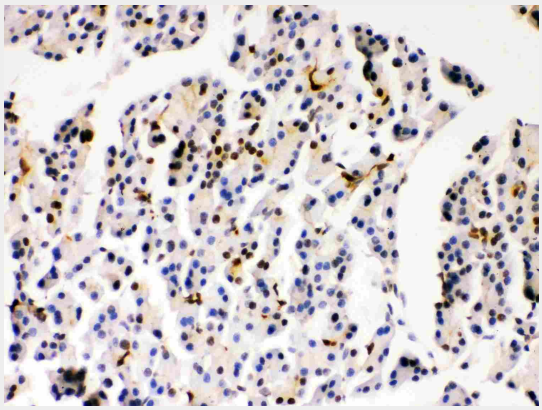
Anti-PARK7/DJ1 Picoband Antibody - Images



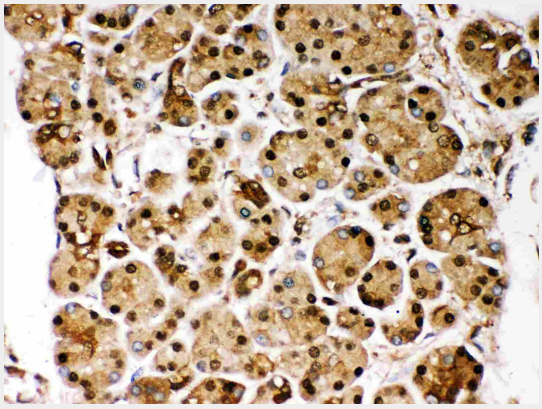
Anti- PARK7 Picoband antibody, ABO11999, Western blottingAll lanes: Anti PARK7 (ABO11999) at 0.5ug/mlLane 1: PANC Whole Cell Lysate at 40ugLane 2: U20S Whole Cell Lysate at 40ugLane 3: SMMC Whole Cell Lysate at 40ugLane 4: HELA Whole Cell Lysate at 40ugPredicted bind size: 20KDObserved bind size: 20KD



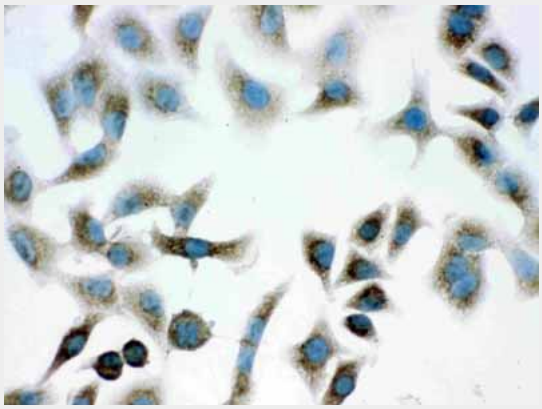
Anti- PARK7 Picoband antibody, ABO11999, IHC(P)IHC(P): Mouse Pancreas Tissue



Anti- PARK7 Picoband antibody, ABO11999, IHC(P)IHC(P): Rat Pancreas Tissue



Anti- PARK7 Picoband antibody, ABO11999, IHC(P)IHC(P): Human Pancreatic Cancer Tissue



10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti- PARK7 Picoband antibody, ABO11999,ICCICC: A549 Cell

Anti-PARK7/DJ1 Picoband Antibody - Background

Parkinson disease (autosomal recessive, early onset) 7, also known as DJ1, is a protein which in humans is encoded by the PARK7 gene. PARK7 belongs to the peptidase C56 family of proteins. PARK7 is mapped to chromosome 1p36. It acts as a positive regulator of androgen receptor-dependent transcription. It is also involved in tumorigenesis and in maintaining mitochondrial homeostasis. This gene may also function as a redox-sensitive chaperone, as a sensor foroxidative stress, and it apparently protects neurons against oxidative stress and cell death. It has been found that PARK7 mutations that impair transcriptional coactivator function can render dopaminergic neurons vulnerable to apoptosis and may contribute to the pathogenesis of Parkinson disease.