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DANRE park7 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5025

Product Information

Application	WB
Primary Accession	Q5XJ36
Reactivity	Zebrafish
Predicted	Mouse, Rat
Host	Rabbit
Clonality	polyclonal
Calculated MW	19764
Isotype	Rabbit IgG
Antigen Source	Zebrafish

Additional Information

Gene ID	449674
Antigen Region	120-149
Other Names	park7;dj1; Protein DJ-1; Protein DJ-1; Parkinson disease protein 7 homolog
Dilution	WB~~1:1000
Target/Specificity	This DANRE park7 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 120-149 amino acids from the C-terminal region of DANRE park7.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	DANRE park7 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	park7 {ECO:0000312|EMBL:AAH83475.1}
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:17166173). 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. 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. But this function is rebuted by other works. 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. 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. Protects histones from adduction by methylglyoxal, controls the levels of methylglyoxal-derived argininine modifications on chromatin. Displays a very low glyoxalase activity that may reflect its deglycase activity. It is involved in neuroprotective mechanisms as well as cell growth and transformation. Its involvement in protein repair could also explain other unrelated functions. Eliminates hydrogen peroxide and protects cells against hydrogen peroxide-induced cell death. Required for correct mitochondrial morphology and function as well as for autophagy of dysfunctional mitochondria. Regulates astrocyte inflammatory responses, may modulate lipid rafts-dependent endocytosis in astrocytes and neuronal cells. Binds to a number of mRNAs containing multiple copies of GG or CC motifs and partially inhibits their translation but dissociates following oxidative stress. Metal-binding protein able to bind copper as well as toxic mercury ions, enhances the cell protection mechanism against induced metal toxicity (By similarity).
Cellular Location	Cell membrane {ECO:0000250|UniProtKB:O88767}; Lipid-anchor {ECO:0000250|UniProtKB:O88767}. Cytoplasm {ECO:0000250|UniProtKB:Q99497}. Nucleus {ECO:0000250|UniProtKB:Q99497} Membrane raft {ECO:0000250|UniProtKB:O88767}. Mitochondrion {ECO:0000250|UniProtKB:Q99497}. Endoplasmic reticulum {ECO:0000250|UniProtKB:Q99497}. 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. Detected in tau inclusions in brains from neurodegenerative disease patients. Membrane raft localization in astrocytes and neuronal cells requires palmitoylation. {ECO:0000250|UniProtKB:Q99497}
Tissue Location	Larval brain and gut from 96 hours post- fertilization (hpf). Ubiquitous in adult; most abundant in brain, eye, heart and muscle. Within brain, neuronal expression is widespread, particularly in the cerebellum, medullary reticular formation and diencephalon. Expressed in major forebrain and diencephalic dopaminergic cell groups.

Background

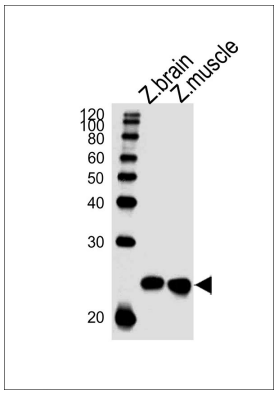
Protects cells against oxidative stress and cell death. May act as an atypical peroxiredoxin-like peroxidase that scavenges hydrogen peroxide. Following removal of a C-terminal peptide, displays protease activity and

enhanced cytoprotective action against oxidative stress-induced apoptosis. Binds to a number of mRNAs containing multiple copies of GG or CC motifs and partially inhibits their translation but dissociates following oxidative stress. Required for correct mitochondrial morphology and function and for autophagy of dysfunctional mitochondria. Regulates astrocyte inflammatory responses. Acts as a positive regulator of androgen receptor-dependent transcription. Prevents aggregation of SNCA. Plays a role in fertilization. Has no proteolytic activity. Has cell-growth promoting activity and transforming activity. May function as a redox-sensitive chaperone (By similarity). Protects dopaminergic neurons against cell death arising from oxidative stress and proteasome inhibition, probably by a TP53/p53-dependent mechanism.

References

Bai Q., et al. Brain Res. 1113:33-44(2006).
Bretaud S., et al. J. Neurochem. 100:1626-1635(2007).

Images



Western blot analysis of lysates from zebra fish brain,zebra fish muscle tissue lysate (from left to right), using (DANRE) park7 Antibody (C-term)(Cat. #AW5025). AW5025 was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.