

Recombinant Mouse Park7 Protein, Myc/DDK-tagged

Cat. No. Park7-4676M **Lot. No.** (See product label)

SPECIFICATION

Product Overview Purified recombinant protein of mouse full-length Parkinson disease (autosomal recessive, early onset) 7 (Park7), with C-terminal MYC/DDK tag, expressed in HEK293T cells.

Species Mouse

Source HEK293

Description 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. 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 aminocarbonols), 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

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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 arginine modifications on chromatin. 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. Displays a very low glyoxalase activity that may reflect its deglycase activity 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 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 Regulates astrocyte inflammatory responses, may modulate lipid rafts-dependent endocytosis in astrocytes and neuronal cells. 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. Metal-binding protein able to bind copper as well as toxic mercury ions, enhances the cell protection mechanism against induced metal toxicity In macrophages, interacts with the NADPH oxidase subunit NCF1 to direct NADPH oxidase-dependent ROS production, and protects against sepsis

Molecular Mass	20.5 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining

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Stability	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
Storage	Store at -80 centigrade after receiving vials.
Concentration	>50 µg/mL as determined by microplate BCA method
Storage Buffer	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10% glycerol.

GENE INFORMATION

Gene Name	Park7 Parkinson disease (autosomal recessive, early onset) 7 [Mus musculus (house mouse)]
Official Symbol	Park7
Synonyms	PARK7; Parkinson disease (autosomal recessive, early onset) 7; protein DJ-1; parkinson disease protein 7 homolog; RNA-binding protein regulatory subunit; Dj1; DJ-1
Gene ID	57320
mRNA Refseq	NM_020569
Protein Refseq	NP_065594
UniProt ID	Q99LX0

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