

PARK7/DJ-1 Protein, Human, Recombinant (His)

General Information

Synonyms:	DJ1;HEL-S-67p;DJ-1;parkinson protein 7
Protein Construction:	A DNA sequence encoding the human PARK7 (Q99497-1) (Met 1-Asp 189) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	Q99497-1
Molecular Weight:	21.3 kDa (predicted); 25 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing 20 mM Tris, 150 mM NaCl, 3 mM DTT, 5% glycerol, pH 8.0. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:
It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:
In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Parkinson's disease locus DJ-1 (PARK7) is a differentially expressed transcript. DJ-1 plays a physiologic role in protection of erythroid cells from oxidant damage, a function unmasked in the context of oxidative stress. PARK7 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. Mutations in the DJ-1 gene are associated

with rare forms of autosomal recessive early-onset Parkinson's disease (PD). DJ-1/p53 interactions contribute to apoptosis resistance in clonal myeloid cells and may serve as a prognostic marker in patients with myelodysplastic syndromes (MDS). DJ-1 regulates redox signaling kinase pathways and acts as a transcriptional regulator of antioxidative gene batteries. Therefore, DJ-1 is an important redox-reactive signaling intermediate controlling oxidative stress after ischemia, upon neuroinflammation, and during age-related neurodegenerative processes. Augmenting DJ-1 activity might provide novel approaches to treating chronic neurodegenerative illnesses such as Parkinson's disease and acute damage such as stroke.

Reference

Takahashi K, et al. (2001). DJ-1 positively regulates the androgen receptor by impairing the binding of PIASx alpha to the receptor. *J. Biol. Chem. (United States)*. 276 (40): 37556-63.

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Kahle PJ, et al. (2009) DJ-1 and prevention of oxidative stress in Parkinson's disease and other age-related disorders. *Free Radic Biol Med*. 47(10): 1354-61.

Xu X, et al. (2010) The familial Parkinson's disease gene DJ-1 (PARK7) is expressed in red cells and plays a role in protection against oxidative damage. *Blood Cells Mol Dis*. 45(3): 227-32.

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