ROCKLAND
Immunochemicals for Research

800-656-7625

fax 610-367-7825

Certificate of Analysis

Product: Affinity Purified Anti-PARK7 (Rabbit)

Code: 600-401-691

Lot #: 15817

Size: 100 µg

Physical State: Liquid (sterile filtered)

Antibody Concentration: 1.3 mg/ml (by UV absorbance at 280 nm)

Buffer: 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2

Stabilizer: None

Preservative: 0.01% (w/v) Sodium Azide

Storage Conditions: Store vial at -20° C prior to opening. Dilute only prior to immediate use. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Expiration date is one (1) year from date of opening.

Figure 1. Western blot analysis is shown using Rockland's Affinity Purified anti-Human PARK7 antibody to detect PARK7 present in Jurkat whole cell lysate. This western blot shows reactivity with human PARK7 protein. Comparison to a molecular weight marker indicates a predominant band of ~28.0 kDa. Peptide competition blocks specific reactivity of the antibody with PARK7 (not shown). A 16% Tris-Tricine gel was used to separate proteins prior to transfer to 0.2 µm nitrocellulose. The blot was incubated with a 1:1,300 dilution of the antibody overnight at 4° C followed by detection using IRDye™800 labeled Goat-a-Rabbit IgG [H&L] (611-132-122) diluted 1:5,000 for 45 min at RT. IRDye™800 fluorescence image was captured using the Odyssey® Infrared Imaging System developed by LI-COR. IRDye is a trademark of LI-COR, Inc. Other detection systems will yield similar results.

Background Information: The product of the PARK7 gene, known as PARK7, Parkinson disease (autosomal recessive, early onset) 7, DJ-1 mutant, and DJ-1 oncogene product, functions as a positive regulator of androgen receptor-dependent transcription. PARK7 may also function as a redox-sensitive chaperone and as a sensor for oxidative stress and also has been reported to prevent aggregation of SNCA. PARK7 protects neurons against oxidative stress and cell death and plays a role in fertilization. While PARK7 has no proteolytic activity, it does have a weak transforming activity. PARK7 forms a homodimer and binds to DJBP and PIAS2. PARK7 is part of a ternary complex containing PARK7, DJBP and AR and shows both a nuclear and cytoplasmic localization. In some cells, PARK7 is associated with mitochondria, particularly after oxidative stress. This protein is highly expressed in pancreas, kidney, skeletal muscle, liver, testis and heart tissue, and is expressed at lower levels in placenta and brain. PARK7 is detected in tau inclusions in brains from neurodegenerative disease patients, in astrocytes, Sertoli cells, spermatogonia, spermatids and spermatozoa. Defects in PARK7 are the cause of autosomal recessive early-onset Parkinson's disease 7 (PARK7). Parkinson's disease (PD) is a complex, multifactorial disorder that is characterized by bradykinesia, resting tremor, muscular rigidity and postural instability, response to treatment with levodopa, the loss of dopaminergic neurons in the substantia nigra and the presence of Lewy bodies (intraneuronal accumulations of aggregated proteins) in surviving neurons.

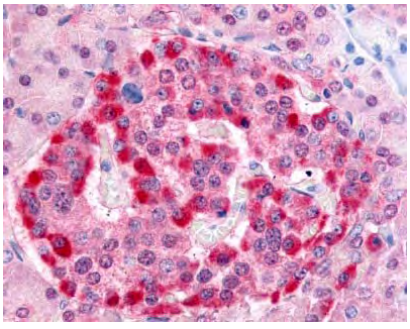

Figure 2. Immunohistochemistry. Rockland's Affinity Purified anti-PARK7 antibody was used at a 5 µg/ml to detect PARK7 in a variety of tissues. In some tissues elevated background staining was noted. In these instances further optimization of dilution is suggested. This image shows PARK7 staining of human pancreas. Tissue was formalin-fixed and paraffin embedded. *Personal Communication, Tina Roush, LifeSpanBiosciences, Seattle, WA.*

Recommended Dilutions:

ELISA	1:10,000 - 1:50,000
WESTERN BLOT	1:500 - 1:2,000
IMMUNOHISTOCHEMISTRY	2 µg/ml - 5 µg/ml
OTHER APPLICATIONS	User Optimized

Relevant Link(s):

Swiss Prot: Q99497

NCBI Link NP_009193

Immunogen: This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding aa 177-189 of Human PARK7 protein.

Application Note(s): This affinity purified antibody has been tested for use in ELISA, immunohistochemistry and western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 28 kDa in size corresponding to PARK7 by western blotting in the appropriate cell lysate or extract.

Purity and Specificity: This is an affinity purified antibody produced by immunoaffinity chromatography using the immunizing peptide after immobilization to a solid phase. Reactivity occurs against human PARK7 protein. BLAST analysis was used to determine that 100% homology with the immunizing peptide sequence is on record for this protein from human, chimpanzee, African green monkey, zebrafish and also for mutant/variant forms of human DJ-1 protein. Cross reactivity with PARK7 from frog, mouse, rat, dog, chicken, Japanese rice fish and Atlantic salmon may also occur as the sequence varies by only one amino acid residue as indicated by BLAST analysis. Reactivity with PARK7 protein from other sources is not known.

Protein Sequence: Human PARK7, 189 aa, predicted MW 19.9 kDa

1	maskralvil	akgaeemetv	ipvdvmrrag	ikvtvaglag	kdpvqcsrdv	vicpdasled
61	akkegpydvv	vlpggnlgaq	nlsesaavke	ilkeqenrkg	liaaicagpt	allaheigfg
121	skvtthplak	dkmmngghyt	ysenrvekdg	liltsrgpgt	sfefalaive	alngke**vaaq**
181	**vkaplvlkd**					

General References:

Takahashi-Niki,K. et al. (2004) Reduced anti-oxidative stress activities of DJ-1 mutants found in Parkinson's disease patients. *Biochem. Biophys. Res. Commun*. **320** (2), 389-397.

Niki,T. et al. (2003) DJBP: a novel DJ-1-binding protein, negatively regulates the androgen receptor by recruiting histone deacetylase complex, and DJ-1 antagonizes this inhibition by abrogation of this complex. *Mol. Cancer Res*. **1** (4), 247-261.

Bonifati,V. et al. (2003) Mutations in the DJ-1 gene associated with autosomal recessive early-onset parkinsonism. *Science* **299** (5604), 256-259.

van Duijn,C.M. et al. (2001) Park7, a novel locus for autosomal recessive early-onset parkinsonism, on chromosome 1p36. *Am. J. Hum. Genet.* **69** (3), 629-634.

Taira,T., Takahashi,K., Kitagawa,R., Iguchi-Ariga,S.M. and Ariga,H. (2001) Molecular cloning of human and mouse DJ-1 genes and identification of Sp1-dependent activation of the human DJ-1 promoter. *Gene* **263** (1-2), 285-292.

Related Products:

#W09-001-370	Jurkat Whole Cell Lysate in SDS-PAGE Sample Buffer
#611-703-127	Peroxidase Conjugated Affinity Purified Anti-RABBIT IgG (H&L) (DONKEY) MX10
#611-132-122	IRDye800 Conjugated Affinity Purified Anti-RABBIT IgG (H&L) (GOAT) MX10
#MB-070	Blocking Buffer for Fluorescent Western Blotting
#KIA-003	***Max*Tag**™ Anti-RABBIT IgG Kit for Immunoblotting

USDA Certification: All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation.

Note: This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information.