Revision 3

#5879 Store at -20C

PARK9 Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IP	H M R Mk	Endogenous	150	Rabbit	#Q9NQ11	23400

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

PARK9 Antibody recognizes endogenous levels of total PARK9 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser282 of human PARK9 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Parkinson's disease (PD), the second most common neurodegenerative disease after Alzheimer's, is a progressive movement disorder characterized by rigidity, tremors and postural instability. The pathological hallmark of PD is progressive loss of dopaminergic neurons in the substantia nigra of the ventral midbrain and the presence of intracellular Lewy bodies (protein aggregates of α-synuclein, ubiquitin and other components) in surviving neurons of the brain stem (1). Various genes and loci (α-synuclein/PARK1 and 4, parkin/PARK2, UCH-L1/PARK5, PINK1/PARK6, DJ-1/PARK7, LRRK2/PARK8, ATP13A2/PARK9) are genetically linked to PD (2).

PARK9, also known as ATP13A2, is a member of the P-type ATPase superfamily and is involved in the lysosomal degradation pathway, clearing α-synuclein aggregates (3,4). The protein has 10 transmembrane domains and wild-type PARK9 localizes to the lysosomal membrane. In contrast, all three known mutations, which have premature stop codons resulting in a truncated protein, are retained in the endoplasmic reticulum and degraded by the proteasome. PARK9 is predominantly expressed in the brain and has been linked to Kufor-Rakeb Syndrome, a monogenic form of recessively inherited, atypical parkinsonism that is characterized by juvenile-onset, with pyramidal degeneration and cognitive dysfunction (4,5).

Background References

1. Fahn, S. (2003) *Ann N Y Acad Sci* 991, 1-14.
2. Moore, D.J. et al. (2005) *Annu Rev Neurosci* 28, 57-87.
3. Ramirez, A. et al. (2006) *Nat Genet* 38, 1184-91.
4. Xiromerisiou, G. et al. (2010) *Neurosurg Focus* 28, E7.
5. Klein, C. and Lohmann-Hedrich, K. (2007) *Curr Opin Neurol* 20, 453-64.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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