Revision 1

Store at -20C

#2567

LRRK2 Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Transfected Only	290	Rabbit	#Q5S007	120892

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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

The LRRK2 Antibody is recommended for transfected total LRRK2 only. The LRRK2 antibody detects a background band in extracts of wild-type and LRRK2 knock-out mouse brain at ~290kD.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide surrounding Gly2090 of human LRRK2. 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 hallmarks of PD are 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). Research studies have shown various genes and loci are genetically linked to PD including α-synuclein/PARK1 and 4, parkin/PARK2, UCH-L1/PARK5, PINK1/PARK6, DJ-1/PARK7, LRRK2/PARK8, synphilin-1, and NR4A2 (2). Leucine-rich repeat kinase 2 (LRRK2) contains amino-terminal leucine-rich repeats (LRR), a Ras-like small GTP binding protein-like (ROC) domain, an MLK protein kinase domain, and a carboxy-terminal WD40 repeat domain. Research studies have linked at least 20 LRRK2 mutations to PD, with the G2019S mutation being the most prevalent (3). The G2019S mutation causes increased LRRK2 kinase activity, which induces a progressive reduction in neurite length that leads to progressive neurite loss and decreased neuronal survival (4). Researchers are currently testing the MLK inhibitor CEP-1347 in PD clinical trials, indicating the potential value of LRRK2 as a therapeutic target for treatment of PD (5).

Background References

1. Fahn, S. (2003) *Ann. NY Acad. Sci.* 991, 1-14.
2. Moore, D.J. et al. (2005) *Annu. Rev. Neurosci.* 28, 57-87.
3. Mata, I.F. et al. (2006) *Trends Neurosci.* 29, 286-293.
4. MacLeod, D. et al. (2006) *Neuron* 52, 587-593.
5. Parkinson Study Group. (2004) *Neurology* 62, 330-332.

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

W: Western Blotting

Cross-Reactivity Key

H: Human

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Limited Uses

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