

Store at  
-20°C

#81650

# LRRK2 (D18E12) Rabbit mAb (Biotinylated)

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UniProt ID #Q5S007

New 06/18

**For Research Use Only. Not For Use In Diagnostic Procedures.****Applications**  
W  
Endogenous**Species Cross-Reactivity\***  
H, M, R**Molecular Wt.**  
290 kDa**Isotype**  
Rabbit IgG\*\*

**Description:** This Cell Signaling Technology antibody is conjugated to biotin under optimal conditions. The biotinylated antibody is expected to exhibit the same species cross-reactivity as the unconjugated LRRK2 (D18E12) Rabbit mAb #13046.

**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  $\alpha$ -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  $\alpha$ -synuclein/PARK1 and 4, parkin/PARK2, UCH-L1/PARK5, PINK1/PARK6, DJ-1/PARK7, LRRK2/PARK8, synphilin-1, and NR4A2 (2).

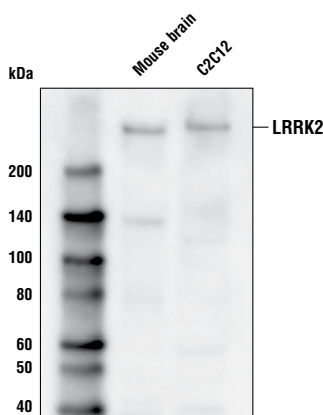
Leucine-rich repeat kinase 2 (LRRK2) contains amino-terminal leucine-rich repeats (LRR), a Ras-like small GTP binding protein-like (ROC) domain, an MLK protein kinase domain, and a carboxy-terminal WD40 repeat domain. Research studies have linked at least 20 LRRK2 mutations to PD, with the G2019S mutation 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.

**Specificity/Sensitivity:** LRRK2 (D18E12) Rabbit mAb (Biotinylated) recognizes endogenous levels of total LRRK2 protein.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro2080 of human LRRK2 protein.



Western blot analysis of extracts from mouse brain tissue and C2C12 cells using LRRK2 (D18E12) Rabbit mAb (Biotinylated).

**Storage:** Supplied in 136 mM NaCl, 2.6 mM KCl, 12 mM sodium phosphate (pH 7.4) dibasic, 2 mg/ml BSA, and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

\*Species cross-reactivity is determined by western blot using the unconjugated antibody.

\*\*Biotinylated antibodies are designed to be detected using streptavidin or anti-biotin antibody conjugates.

**Recommended Antibody Dilutions:**

Western blotting 1:1000

For product specific protocols and a complete listing of recommended companion products please see the product web page at [www.cellsignal.com](http://www.cellsignal.com).

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**Applications:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig S—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected **Species** enclosed in parentheses are predicted to react based on 100% homology.