

Product Information

Monoclonal Anti-LRRK2, Clone PROK57

produced in mouse, purified immunoglobulin

Product Number **L3044**

Product Description

Monoclonal Anti-LRRK2 (mouse IgM isotype) is derived from the hybridoma PROK57 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a fragment of human LRRK2 (GeneID: 120892). The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Monoclonal Anti-LRRK2 recognizes human and mouse LRRK2. The antibody may be used in various immunochemical techniques including ELISA, immunoblotting (~250 KDa), and immunocytochemistry.

Parkinson's disease (PD) is the most common motor neurodegenerative disease, characterized by the progressive loss of dopaminergic neurons from the substantia nigra, and the presence of intracellular Lewy bodies. Mutations in several genes have been genetically linked to PD. Mutations in the gene encoding LRRK2 (Leucine-Rich Repeat protein Kinase 2, also known as PARK8 and dardarin) have been recently identified to cause late-onset autosomal-dominant PD.¹⁻³ LRRK2 mRNA is expressed throughout the brain predominantly within regions of the basal ganglia that are associated with PD.⁴ The LRRK2 homologue, LRRK1, shares domain structure similarity with LRRK2, but is not known to carry mutations causing PD.^{4,5}

LRRK2 is composed of multiple domains, including a leucine-rich repeat (LRR) domain, a Roc GTPase domain followed by a C-terminal of ROC (COR) domain, a Serine/Threonine kinase domain, and a C-terminal WD40 domain. The N-terminal region (~900 amino acids) contains ankyrin (ANK) repeats. The presence of multiple protein interaction domains suggests that in addition to its kinase and GTPase activities, LRRK2 may serve as a scaffold protein for the assembly of multiprotein signaling complex. At least 20 LRRK2 mutations have been linked to PD. The most prevalent LRRK2 mutations linked to autosomal-dominant PD are G2019S and R1441C, both associated with increased kinase activity. In addition, R1441C mutation has been shown to disrupt GTPase activity.⁷

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1–2 µg/mL is recommended using mouse brain crude extract.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Paisan-Ruiz, C. et al., *Neuron*, **44**, 595-600 (2004).
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3. Cookson, M.R. et al., *J. Neurosci.*, **27**, 11865-11868 (2007).
4. Simon-Sanchez, J. et al., *Eur. J. Neurochem.*, **23**, 659-666 (2007).
5. Greggio, E. et al., *J. Neurochem.*, **102**, 903-102 (2007).
6. Lewis, P.A. et al., *Biochem. Biophys. Res. Commun.*, **357**, 668-671 (2007).

VS,GG,DXP,PHC,MAM 01/19-1