SANTA CRUZ BIOTECHNOLOGY, INC.

LRRK1 (N-13): sc-160498

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The Power to Question

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. LRRK1 (leucine-rich repeat serine/threonine-protein kinase 1), also known as RIPK6, Roco1 or KIAA1790, is a 2,038 amino acid cytoplasmic protein that contains one protein kinase domain, four ANK repeats and 11 leucine-rich repeats and belongs to the Ser/Thr protein kinase family. Using magnesium as a cofactor, LRRK1 catalyzes the ATP-dependent phosphorylation of target proteins. The gene encoding LRRK1, which is expressed as four alternatively spliced isoforms, is thought to be involved in the pathogenesis of Parkinson's disease.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610986. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Korr, D., Toschi, L., Donner, P., Pohlenz, H.D., Kreft, B. and Weiss, B. 2006. LRRK1 protein kinase activity is stimulated upon binding of GTP to its Roc domain. Cell. Signal. 18: 910-920.
3. Greggio, E., Lewis, P.A., van der Brug, M.P., Ahmad, R., Kaganovich, A., Ding, J., Beilina, A., Baker, A.K. and Cookson, M.R. 2007. Mutations in LRRK2/dardarin associated with Parkinson disease are more toxic than equivalent mutations in the homologous kinase LRRK1. J. Neurochem. 102: 93-102.
4. Taylor, J.P., Hulihan, M.M., Kachergus, J.M., Melrose, H.L., Lincoln, S.J., Hinkle, K.M., Stone, J.T., Ross, O.A., Hauser, R., Aasly, J., Gasser, T., Payami, H., Wszolek, Z.K. and Farrer, M.J. 2007. Leucine-rich repeat kinase 1: a paralog of LRRK2 and a candidate gene for Parkinson's disease. Neurogenetics 8: 95-102.
5. Marín, I. 2008. Ancient origin of the Parkinson disease gene LRRK2. J. Mol. Evol. 67: 41-50.
6. Wolozin, B., Saha, S., Guillily, M., Ferree, A. and Riley, M. 2008. Investigating convergent actions of genes linked to familial Parkinson's disease. Neurodegener. Dis. 5: 182-185.
7. Westerlund, M., Belin, A.C., Anvret, A., Bickford, P., Olson, L. and Galter, D. 2008. Developmental regulation of leucine-rich repeat kinase 1 and 2 expression in the brain and other rodent and human organs: Implications for Parkinson's disease. Neuroscience 152: 429-436.

CHROMOSOMAL LOCATION

Genetic locus: LRRK1 (human) mapping to 15q26.3; Lrrk1 (mouse) mapping to 7 C.

SOURCE

LRRK1 (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of LRRK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160498 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

LRRK1 (N-13) is recommended for detection of LRRK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LRRK1 (N-13) is also recommended for detection of LRRK1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for LRRK1 siRNA (h): sc-89929, LRRK1 siRNA (m): sc-149115, LRRK1 shRNA Plasmid (h): sc-89929-SH, LRRK1 shRNA Plasmid (m): sc-149115-SH, LRRK1 shRNA (h) Lentiviral Particles: sc-89929-V and LRRK1 shRNA (m) Lentiviral Particles: sc-149115-V.

Molecular Weight of LRRK1: 200 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.