SANTA CRUZ BIOTECHNOLOGY, INC.

LRRK2 (133AT1218): sc-130159

BACKGROUND

Parkinson's disease is a disorder of movement, cognition and emotion. It is characterized pathologically by neuronal degeneration with Lewy bodies, which are cytoplasmic inclusion bodies containing deposits of aggregated proteins. Mutations in the leucine-rich repeat kinase 2 gene (LRRK2) cause autosomal-dominant parkinsonism, with clinical features of Parkinson's disease and with pleomorphic pathology including deposits of aggregated protein. The LRRK2 protein consists of multiple domains and belongs to the Roco family, a novel group of the Ras/GTPase superfamily. Besides the GTPase (Roc) domain, it contains a predicted kinase domain, with homology to MAP kinase kinase kinases. LRRK2 is localized in the cytoplasm and is associated with cellular membrane structures. The purified LRRK2 protein demonstrates autokinase activity.

REFERENCES

1. Zimprich, A., et al. 2004. Mutations in LRRK2 cause autosomal-dominant parkinsonism with pleomorphic pathology. Neuron 44: 601-607.
2. Mata, I.F., et al. 2005. LRRK2 pathogenic substitutions in Parkinson's disease. Neurogenetics 6: 171-177.
3. Foroud, T. 2005. LRRK2: both a cause and a risk factor for Parkinson's disease? Neurology 65: 664-665.
4. Paisan-Ruiz, C., et al. 2005. LRRK2 gene in Parkinson disease: mutation analysis and case control association study. Neurology 65: 696-700.
5. Farrer, M., et al. 2005. LRRK2 mutations in Parkinson's disease. Neurology 65: 738-740.
6. Zabetian, C.P., et al. 2005. A clinic-based study of the LRRK2 gene in Parkinson disease yields new mutations. Neurology 65: 741-744.
7. Kachergus, J., et al. 2005. Identification of a novel LRRK2 mutation linked to autosomal dominant parkinsonism: evidence of a common founder across European populations. Am. J. Hum. Genet. 76: 672-680.
8. Toft, M., et al. 2005. LRRK2 mutations are not common in Alzheimer's disease. Mech. Ageing Dev. 126: 1201-1205.
9. Nichols, W.C., et al. 2005. Genetic screening for a single common LRRK2 mutation in familial Parkinson's disease. Lancet 365: 410-412.

CHROMOSOMAL LOCATION

Genetic locus: LRRK2 (human) mapping to 12q12; Lrrk2 (mouse) mapping to 15 E3.

SOURCE

LRRK2 (133AT1218) is a mouse monoclonal antibody raised against 261 C-terminal residues of purified recombinant LRRK2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

LRRK2 (133AT1218) is recommended for detection of LRRK2 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for LRRK2 siRNA (h): sc-45380, LRRK2 siRNA (m): sc-45750, LRRK2 shRNA Plasmid (h): sc-45380-SH, LRRK2 shRNA Plasmid (m): sc-45750-SH, LRRK2 shRNA (h) Lentiviral Particles: sc-45380-V and LRRK2 shRNA (m) Lentiviral Particles: sc-45750-V.

Molecular Weight of LRRK2: 280 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

SELECT PRODUCT CITATIONS

1. Cai, H.Y., et al. 2021. Adjusting vascular permeability, leukocyte infiltration, and microglial cell activation to rescue dopaminergic neurons in rodent models of Parkinson's disease. NPJ Parkinsons Dis. 7: 91.
2. Wang, J.P., et al. 2022. Leucine-rich repeat kinase 2 is protective during acute kidney injury through its activation of autophagy in podocytes. Environ. Toxicol. E-published.

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 for detailed protocols and support products.