SANTA CRUZ BIOTECHNOLOGY, INC.

Parkin (PRK8): sc-32282

BACKGROUND

Parkin is a zinc-finger protein that is related to ubiquitin at the amino-terminus. The wildtype Parkin gene, which maps to human chromosome 6q26, encodes a 465 amino acid full-length protein that is expressed as multiple isoforms. Mutations in the Parkin gene are responsible for autosomal recessive juvenile Parkinson's disease and commonly involve deletions of exons 3-5. In humans, Parkin is expressed in a subset of cells of the basal ganglia, midbrain, cerebellum and cerebral cortex, and is subject to alternative splicing in different tissues. Parkin expression is also high in the brainstem of mice, with the majority of immunopositive cells being neurons. The Parkin gene has been identified in a diverse group of organisms including mammals, birds, frog and fruit flies, suggesting that analogous functional roles of the Parkin protein may have been highly conserved during the course of evolution.

CHROMOSOMAL LOCATION

Genetic locus: PARK2 (human) mapping to 6q26; Park2 (mouse) mapping to 17 A1.

SOURCE

Parkin (PRK8) is a mouse monoclonal antibody raised against recombinant human Parkin with an epitope mapping between amino acids 399-465 at the C-terminus within the RING2/R2, second RIND domain.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Parkin (PRK8) is available conjugated to agarose (sc-32282 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-32282 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32282 PE), fluorescein (sc-32282 FITC), Alexa Fluor® 488 (sc-32282 AF488), Alexa Fluor® 546 (sc-32282 AF546), Alexa Fluor® 594 (sc-32282 AF594) or Alexa Fluor® 647 (sc-32282 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32282 AF680) or Alexa Fluor® 790 (sc-32282 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Parkin (PRK8) is recommended for detection of Parkin 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

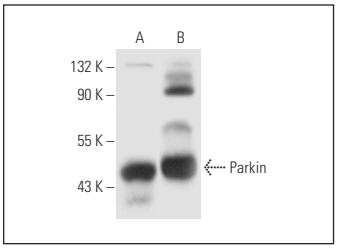
Suitable for use as control antibody for Parkin siRNA (h): sc-42158, Parkin siRNA (m): sc-42159, Parkin siRNA (r): sc-270243, Parkin shRNA Plasmid (h): sc-42158-SH, Parkin shRNA Plasmid (m): sc-42159-SH, Parkin shRNA Plasmid (r): sc-270243-SH, Parkin shRNA (h) Lentiviral Particles: sc-42158-V, Parkin shRNA (m) Lentiviral Particles: sc-42159-V and Parkin shRNA (r) Lentiviral Particles: sc-270243-V.

Molecular Weight of Parkin: 50-58 kDa.

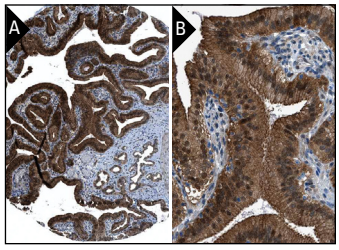
STORAGE

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

DATA



Parkin (PRK8): sc-32282. Western blot analysis of Parkin expression in SH-SY5Y whole cell lysate (**A**) and mouse brain tissue extract (**B**).



Parkin (PRK8): sc-32282. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic and nuclear staining of glandular cells at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Fallon, L., et al. 2006. A regulated interaction with the UIM protein Eps15 implicates Parkin in EGF receptor trafficking and PI3K-Akt signalling. Nat. Cell Biol. 8: 834-842.
2. Wang, X., et al. 2011. PINK1 and Parkin target Miro for phosphorylation and degradation to arrest mitochondrial motility. Cell 147: 893-906.
3. Kemeny, S., et al. 2012. Parkin promotes degradation of the mitochondrial pro-apoptotic ARTS protein. PLoS ONE 7: e38837.
4. Calì, T., et al. 2013. Enhanced Parkin levels favor ER-mitochondria crosstalk and guarantee Ca^{2+} transfer to sustain cell bioenergetics. Biochim. Biophys. Acta 1832: 495-508.
5. Kane, L.A., et al. 2014. PINK1 phosphorylates ubiquitin to activate Parkin E3 ubiquitin ligase activity. J. Cell Biol. 205: 143-153.
6. Gouspillou, G., et al. 2015. Anthracycline-containing chemotherapy causes long-term impairment of mitochondrial respiration and increased reactive oxygen species release in skeletal muscle. Sci. Rep. 5: 8717.
7. Qvit, N., et al. 2016. Glyceraldehyde-3-phosphate dehydrogenase (GAPDH) protein-protein interaction inhibitor reveals a non-catalytic role for GAPDH oligomerization in cell death. J. Biol. Chem. 291: 13608-13621.
8. Suliman, H.B., et al. 2017. Mitochondrial quality control in alveolar epithelial cells damaged by *S. aureus* pneumonia in mice. Am. J. Physiol. Lung Cell. Mol. Physiol. 313: L699-L709.
9. Kruppa, A.J., et al. 2018. Myosin VI-dependent Actin cages encapsulate Parkin-positive damaged mitochondria. Dev. Cell 44: 484-499.e6.

RESEARCH USE

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