SANTA CRUZ BIOTECHNOLOGY, INC.

PrP (8B4): sc-47729

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Prion diseases, or transmissible spongiform encephalopathies (TSEs) are manifested as genetic, infectious or sporadic, lethal neurodegenerative disorders involving alterations of the prion protein (PrP). Characteristic of prion diseases, cellular PrP (PrPc) is converted to the disease form, PrPSc, through alterations in the protein folding conformations. PrPc is constitutively expressed in normal adult brain and is sensitive to proteinase K digestion, while the altered PrPSc conformation is resistant to proteases, resulting in a distinct molecular mass after PK treatment. Consistent with the transient infection process of prion diseases, incubation of PrPc with PrPSc both *in vitro* and *in vivo* produces PrPc that is resistant to protease degradation. Infectious PrPSc is found at high levels in the brains of animals affected by TSEs, including scrapie in sheep, BSE in cattle and Cruetzfeldt-Jacob disease in humans.

CHROMOSOMAL LOCATION

Genetic locus: PRNP (human) mapping to 20p13; Prnp (mouse) mapping to 2 F2.

SOURCE

PrP (8B4) is a mouse monoclonal antibody raised against full length recombinant mouse PrP with epitope mapping near the N-terminus of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PrP (8B4) is available conjugated to agarose (sc-47729 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-47729 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-47729 PE), fluorescein (sc-47729 FITC), Alexa Fluor® 488 (sc-47729 AF488), Alexa Fluor® 546 (sc-47729 AF546), Alexa Fluor® 594 (sc-47729 AF594) or Alexa Fluor® 647 (sc-47729 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-47729 AF680) or Alexa Fluor® 790 (sc-47729 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PrP (8B4) is recommended for detection of PrP of mammalian 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

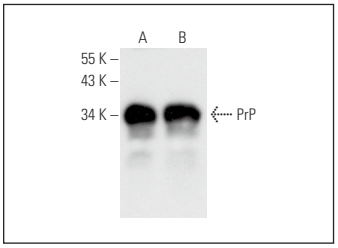
Suitable for use as control antibody for PrP siRNA (h): sc-36318, PrP siRNA (m): sc-36319, PrP shRNA Plasmid (h): sc-36318-SH, PrP shRNA Plasmid (m): sc-36319-SH, PrP shRNA (h) Lentiviral Particles: sc-36318-V and PrP shRNA (m) Lentiviral Particles: sc-36319-V.

Molecular Weight of PrP: 30 kDa.

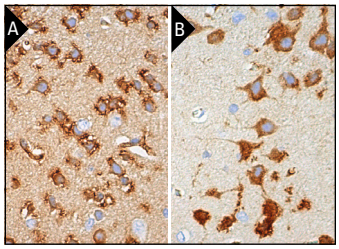
STORAGE

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

DATA



PrP (8B4): sc-47729. Western blot analysis of PrP expression in mouse (**A**) and rat (**B**) brain tissue extracts.



PrP (8B4): sc-47729. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing cytoplasmic staining of neuronal cells, glial cells and endothelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat brain tissue showing cytoplasmic staining of neuronal cells and glial cells (**B**).

SELECT PRODUCT CITATIONS

1. Saunders, S.E., et al. 2008. Environmentally-relevant forms of the prion protein. Environ. Sci. Technol. 42: 6573-6579.
2. Thellung, S., et al. 2011. Human PrP90-231-induced cell death is associated with intracellular accumulation of insoluble and protease-resistant macroaggregates and lysosomal dysfunction. Cell Death Dis. 2: e138.
3. Timmes, A.G., et al. 2013. Recombinant prion protein refolded with lipid and RNA has the biochemical hallmarks of a prion but lacks *in vivo* infectivity. PLoS ONE 8: e71081.
4. Chen, C., et al. 2014. Apparent reduction of ADAM10 in scrapie-infected cultured cells and in the brains of scrapie-infected rodents. Mol. Neurobiol. 50: 875-887.
5. Honda, H., et al. 2016. C-terminal-deleted prion protein fragment is a major accumulated component of systemic PrP deposits in hereditary prion disease with a 2-Bp (CT) deletion in PRNP codon 178. J. Neuropathol. Exp. Neurol. 75: 1008-1019.
6. Ferreira, D.G., et al. 2017. α-synuclein interacts with PrPc to induce cognitive impairment through mGluR5 and NMDAR2B. Nat. Neurosci. 20: 1569-1579.
7. Wiegmans, A.P., et al. 2019. Secreted cellular prion protein binds doxorubicin and correlates with anthracycline resistance in breast cancer. JCI Insight 5: e124092.
8. Block, A.J., et al. 2021. Efficient interspecies transmission of synthetic prions. PLoS Pathog. 17: e1009765.
9. Ribes, J.M., et al. 2023. Prion protein conversion at two distinct cellular sites precedes fibrillisation. Nat. Commun. 14: 8354.

RESEARCH USE

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