SANTA CRUZ BIOTECHNOLOGY, INC.

PrP (5B2): sc-47730

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 (5B2) 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 (5B2) is available conjugated to agarose (sc-47730 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-47730 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-47730 PE), fluorescein (sc-47730 FITC), Alexa Fluor® 488 (sc-47730 AF488), Alexa Fluor® 546 (sc-47730 AF546), Alexa Fluor® 594 (sc-47730 AF594) or Alexa Fluor® 647 (sc-47730 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-47730 AF680) or Alexa Fluor® 790 (sc-47730 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PrP (5B2) is recommended for detection of PrP of mammalian origin by Western Blotting (starting dilution 1:500, 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.

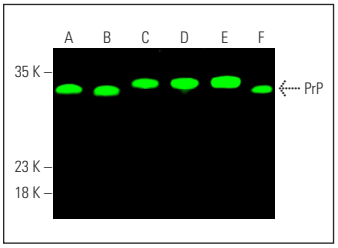
Molecular Weight of PrP: 30 kDa.

Positive Controls: C32 whole cell lysate: sc-2205, SK-MEL-28 cell lysate: sc-2236 or BC_3H1 cell lysate: sc-2299.

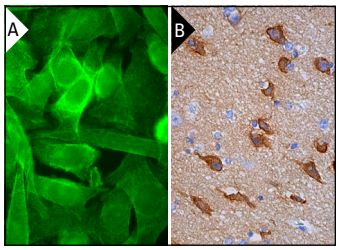
STORAGE

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

DATA



PrP (5B2): sc-47730. Near-infrared western blot analysis of PrP expression in C32 (**A**), SK-MEL-28 (**B**), BC_3H1 (**C**), NIH/3T3 (**D**), C2C12 (**E**) and NRK (**F**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



PrP (5B2) Alexa Fluor® 488: sc-47730 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing membrane localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**A**). PrP (5B2): sc-47730. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing membrane and cytoplasmic staining of neuronal 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. Pham, N., et al. 2014. Down regulation of brain cellular prion protein in an animal model of insulin resistance: possible implication in increased prevalence of stroke in pre-diabetics/diabetics. Biochem. Biophys. Res. Commun. 448: 151-156.
3. Marin, R., et al. 2016. Anomalies occurring in lipid profiles and protein distribution in frontal cortex lipid rafts in dementia with Lewy bodies disclose neurochemical traits partially shared by Alzheimer's and Parkinson's diseases. Neurobiol. Aging 49: 52-59.
4. Philiastides, A., et al. 2019. A new cell model for investigating prion strain selection and adaptation. Viruses 11: 888.
5. Rezvani Boroujeni, E., et al. 2020. Soluble prion peptide 107-120 protects neuroblastoma SH-SY5Y cells against oligomers associated with Alzheimer's disease. Int. J. Mol. Sci. 21: 7273.
6. 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.

PROTOCOLS

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