

Prion Protein (a.a. 109-112)

Cat. # PM3971

Host Mouse Monoclonal IgG2a

Size 100 µl

Background:

Prion related neurodegenerative diseases, called transmissible spongiform encephalopathies, are observed in many animal species. These diseases involve conversion of normal cellular prion protein (PrP^C) into a form that is insoluble and resistant to proteases (PrP^{Sc}). The protease resistant form can polymerize into fibrils which accumulate in infected tissues and cause cell death and tissue damage. PrPs have an N-terminal signal sequence and a C-terminal linkage to glycosylphosphatidylinositol anchor. The mature protein is a glycosylated protein that associates with cell membranes. Phosphorylation of PrP^C at Ser-43 by Cdk5 promotes proteinase K resistance, prion aggregation, and fibril formation *in vitro*. In addition, Ser-43 phosphorylation is upregulated in scrapie-infected mouse brain relative to controls. Thus, phosphorylation of Ser-43 may be an important mechanism leading conversion of PrP^C to PrP^{Sc} and the onset of disease.

References

- Prusiner, S.B. (1982) Science. 216:136.
 Kascsak, R.J. et al. (1987) J. Virology. 61:3688.
 Monari, L. et al. (1994) Proc. Natl. Acad. Sci. 91:2839.
 Gianoupolous, P.N. et al. (2009) J. Neurosci. 29:8743.

Immunogen:

Clone 3F4 antibody binds to amino acids 109 to 112 in human prion protein. This sequence is conserved in feline and hamster, but is less conserved in rat and mouse Prion protein.

Applications:

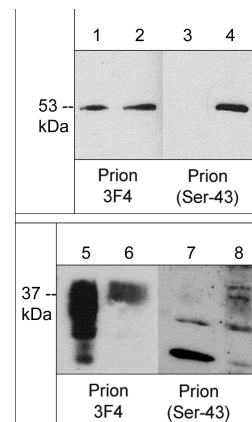
WB	1:1000
ELISA	1:2000
IHC	1:100

End user should determine optimal dilution for their particular applications and experiments. Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

Related Products:

- PP3951 Prion Protein (Ser-43), phospho-specific Rabbit Polyclonal
 PX3955 phospho-Prion Protein (Ser-43) Peptide
 CM2361 Cdk5 Mouse Monoclonal
 AK6060 Actin & Tubulin Antibody Sampler Kit
 MK6050 MAP Kinase Activation Antibody Sampler Kit
 MS3001 Donkey Anti-Mouse Ig:HRP

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Western blot of GST recombinant human full-length prion protein that was untreated (lanes 1 and 3) or phosphorylated with Cdk5/p25 (lanes 2 & 4). Endogenous prion phosphorylation was examined in human PC3 cells untreated (lanes 5 & 7) or treated with Calyculin A (100 nM) for 30 min (lanes 6 & 8). The blots were probed with anti-Prion protein (3F4) (lanes 1, 2, 5, & 6) or anti-Prion protein (Ser-43) (lanes 3, 4, 7, & 8).

Buffer and Storage:

Mouse monoclonal antibody purified with protein A chromatography is supplied in 100µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Do not aliquot. Stable for 1 year.

Specificity:

The antibody detects endogenous prion protein in human PC3 and A431 cell lines. In addition, the antibody strongly detects human recombinant Prion protein, and weakly detects bovine recombinant Prion protein.

*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

web: www.ecmbiosciences.com

telephone: 859-879-2075

email: info@ecmbiosciences.com

toll-free: 1-800-859-8202