

Prion Protein (Ser-43), phospho-specific

Cat. # PP3951

Host Rabbit Polyclonal

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:

Prion Protein (Ser-43) antibody was generated from a phospho-peptide that included amino acids surrounding Serine 43 in human prion protein. This sequence has high homology to the conserved site in rat, mouse, and bovine prion protein.

Applications:

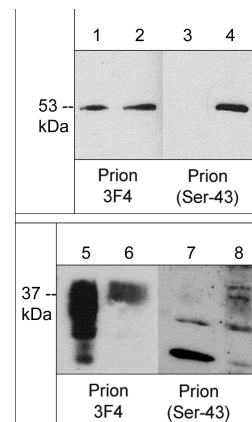
WB 1:1000
 ELISA 1:2000

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:

- PM3971 Prion Protein (a.a. 109-112) Mouse Monoclonal
 PX3955 phospho-Prion Protein (Ser-43) Peptide
 CM2361 Cdk5 Mouse Monoclonal
 MK6050 MAP Kinase Activation Antibody Sampler Kit
 AK6060 Actin & Tubulin Antibody Sampler Kit
 RS3251 Mouse Anti-Rabbit Ig Light-Chain Specific:HRP Mouse Monoclonal

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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:

Rabbit polyclonal, affinity-purified antibody 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:

This antibody was affinity purified using phospho-Prion Protein (Ser-43) peptide (without carrier). The antibody detects a human recombinant Prion protein after phosphorylation by Cdk5/p25 complex. In addition, the antibody may detect aggregated forms of prion in human PC3 cells treated with Calyculin A.

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

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