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ProductInformation

Monoclonal Anti-Prion Protein
Clone IPC1
produced in mouse, purified immunoglobulin

Catalog Number **P5999**

Product Description

Monoclonal Anti-Prion Protein (mouse IgG1 isotype) is derived from the hybridoma IPC1 produced by the fusion of mouse myeloma cells (NSO cells) and splenocytes from PrP knock-out mice immunized with recombinant mouse PrP^c. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Prion Protein recognizes mouse, rat and hamster prion, three bands, 25-35 kDa. The product is useful in ELISA, immunoblotting and immunoprecipitation.

Prion-related diseases are fatal neurodegenerative disorders also known as transmissible spongiform encephalopathies (TSEs). Such TSEs include Creutzfelt-Jacob disease (CJD), Gerstmann-Staussler-Scheinker syndrome (GSS) and fatal familial insomnia (FFI) in humans, bovine spongiform encephalopathy (BSE), scrapie in sheep, and chronic wasting disease in elk.[1] Histological characteristics of TSEs include spongiform change, astrocytosis, neuronal loss and progressive accumulation of amyloid plaques containing protease-resistant prion protein. The modified state (known as PrPSc for scrapie-associated prion protein), is the infectious agent and mutated PrP genes are responsible for the hereditary aspect of TSEs.[2] The root cause of TSEs was thought to be nucleic acids in the form of viral DNA or RNA. However, after exhaustive research into the nature of scrapie infectivity, Prusiner and his colleagues presented the controversial hypotheses that the disease was spread by a “proteinaceous infectious particle” or prion.[3] The prion protein is a natural protein synthesized within the secretory pathway and transported to the surface of the cell where it is tethered to the cell membrane by a glycosylphosphatidylinositol (GPI) anchor.[4,5] PrP is constitutively expressed in brain and other tissues of healthy humans and animals and is present in high levels at the synapse.[6] The activity of PrP is not well understood; it may be involved in copper utilization,[7] serving to buffer copper at the synaptic cleft or to mediate re-uptake of copper into the presynapse. Alternatively, bound copper may influence PrP binding characteristics; the PrP-copper complex may be crucial for synaptic homeostasis as a result of its anti-oxidant activity.[6] Aggregates of prion protein are often, but not always, found in brains of individuals with a prion disease. Prion plaques are of three types: unicentric (single, compact core), multicentric (two or more cores and definite border), and diffuse plaques without a definite central core.[8]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1 mg/ml.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For extended storage, freeze at –20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.05-0.1 µg/ml is determined using mouse brain extract.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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