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ProductInformation

MONOCLONAL ANTI-PARVALBUMIN
Clone PARV-19
Mouse Ascites Fluid

Product No. **P 3088**

Product Description

Monoclonal Anti-Parvalbumin (mouse IgG1 isotype) is derived from the PARV-19 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Purified frog muscle parvalbumin was used as the immunogen. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-Parvalbumin recognizes parvalbumin in a Ca^{2+}-ion dependent manner. The product reacts with parvalbumin (12 kDa) originating from human, bovine, goat, pig, rabbit, dog, cat, rat, frog and fish. It does not react with other members of the EF-hand family such as calmodulin, intestinal calcium-binding protein, S100A2 (S100L), S100A6 (calcyclin), the α-chain of S-100 (i.e., in S-100a and S-100ao), or the β-chain (i.e., in S-100a and S-100b), myosin light chain and troponin. The antibody may be used in ELISA, immunoblotting and immunohistochemical staining of formalin or methacarnfixed, paraffin-embedded or paraformaldehyde, perfusion-fixed brain tissue.

Monoclonal Anti-Parvalbumin may be used for the localization of parvalbumin using various immunochemical assays including ELISA, immunoblot, and immunohistochemistry.

Parvalbumin,[1-3] belongs together with calmodulin, S-100, calbindin D-28k, troponin C and other proteins, to a family of low molecular weight calcium-binding proteins (CaBPs).[2] These CaBPs have homologous primary structures, which contain polypeptide folds of the EF-hand type for the acceptance of Ca^{2+}. There are two types of CaBPs; "trigger"- and "buffer"-proteins. Those of the "trigger" type act by changing shape upon binding calcium. This distortion exposes regions on the surface of the protein, which interact with surrounding target molecules thus altering their activity. The CaBPs of the "buffer" type are conceived as a system which is in charge of controlling the calcium concentration inside certain cells. Ca^{2+} acts as a secondary messenger to translate external signals into intracellular information, and is involved in the regulation of multiple cell functions. The Ca^{2+} signal is interpreted by the intracellular calcium-binding proteins, and becomes a meaningful message for the cell. In the CNS, Ca^{2+} has an important effect in synaptic transmission and axonal transport as both mechanisms require the presence of specific CaBPs exerting regulatory roles. Parvalbumin is present in neuronal subsystems[4] and in fast muscle fibers,[5] as well as in other tissues.[6] It may confer to these cells peculiar skills in the handling of the calcium-ions. The distribution of parvalbumin within neural tissue is restricted.[7] It is known to exist in various projecting neurons[4] and also in a subpopulation of gamma-aminobutyric acid (GABA)-containing neurons.[3] Because of its preferential association with neurons characterized by rapid-firing or innervating slowly adapting receptors as well as with neurons with high oxidative capacity, parvalbumin is assumed to influence the excitability of nerve cells.[7] Thus, parvalbumin is an attractive neuroanatomical marker. Polyclonal and monoclonal antibodies against parvalbumin have been instrumental in the localization of parvalbumin in different tissues and cell populations.[2]

Reagents

The product is provided as ascites fluid with 0.1% sodium azide as a preservative.

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.

Product Profile
A working dilution of at least 1:2,000 was determined by indirect immunoperoxidase labeling of formalin-fixed, paraffin-embedded sections of rat tongue or rat cerbellum.
In order to obtain best results, it is recommended that each user determine the optimal working dilution for individual applications by titration assay.

Storage
For continuous use, store at 2-8 °C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

References

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