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Product Information

Anti-Parvalbumin antibody, Mouse monoclonal clone PARV-19
purified from hybridoma cell culture

Product Number **SAB4200545**

Product Description

Monoclonal Anti-Parvalbumin (mouse IgG1 isotype) is derived from the hybridoma PARV-19 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with purified frog muscle parvalbumin. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2. The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-Parvalbumin recognizes parvalbumin in a Ca^{2+}-ion dependent manner. The antibody recognizes 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, or troponin. The antibody may be used in various immunochemical techniques including ELISA, immunoblotting, immunocytochemistry, and immunohistochemistry.

Ca^{2+} is involved in various cellular processes including cell motility, excitation–contraction of muscles, transmission of nerve impulses, release of neurotransmitters, membrane permeability, and cell secretory procedures. In order to control these processes effectively and with high temporal and spatial precision, specific intracellular Ca^{2+} exchangers are needed. Parvalbumin (PV) belongs to the family of such important Ca^{2+}-binding molecules that keep a check on Ca^{2+} switching in a cell.[1] It contains three highly conserved helix-loop-helix EF-hand Ca^{2+} binding motifs with the two C-terminal motifs functioning in physiological metal binding. Both motifs show high affinity for Ca^{2+} and moderate-low affinity for Mg^{2+}.[2]

Interestingly, PV deficiency alters neuronal activity, a key mechanism leading to epileptic seizures or Parkinson.[1,3] Moreover, this may also cause atypical relaxation of the heart and result in diastolic dysfunction, which is a major cause of heart failure, predominantly among the aged.[2]

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: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards 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 1-2 μg/mL is recommended using mouse muscle extracts.

Immunofluorescence: a working concentration of 10-20 μg/mL is recommended using BLO-11 cells.

Immunohistochemistry: a working concentration of 5-10 μg/mL is recommended using formalin-fixed paraffin embedded rat cerebellum.

Note: In order to obtain the best results using various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Arif, S.H., *Bioessays*, **31**, 410-421 (2009).
2. Wang, W. et al., *Gen. Physiol. Biophys*., **28**, F3-F6 (2009).
3. Fernández-Suárez, D. et al., *J. Neuropathol. Exp. Neurol*., **71**, 973-982 (2012).

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