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ProductInformation

ANTI- CALRETININ
Developed in Rabbit, Affinity Isolated Antibody

Product Number **C 7479**

Product Description

Anti-Calretinin is developed in rabbit using a synthetic peptide corresponding to the C-terminal region of rat calretinin (amino acids 194-209) conjugated to KLH as immunogen. This sequence is specific for calretinin and not found in other members of the EF-hand family such as calbindin-D-28K, calbindin-D-9K, myosin light chain, parvalbumin, S-100a, S-100b, S100A2 (S100L) and S100A6 (calcyclin). This sequence is identical in human and mouse calretinin and highly conserved in chicken calretinin. Anti-Calretinin is affinity-purified using the immunogenic peptide immobilized on agarose.

Anti-Calretinin recognizes human, rat and chicken calretinin (29 kDa) and may be used for immunoblotting and immunohistochemistry (formalin-fixed, paraffin-embedded tissue sections). The antibody does not cross-react with calbindin-D-28K (rat). By immunoblotting, staining of calretinin is specifically inhibited with calretinin immunizing peptide. Enzymatic predigestion of formalin-fixed, paraffin-embedded sections by proteolytic enzymes (e.g., 0.1% trypsin or protease, 10 min., at RT or 37 °C) improves immunohistochemical staining with the antibody.

Calretinin[1,2] is an intracellular Ca^{2+}-binding protein, with broad tissue distribution and is a member of the calmodulin superfamily. By acting as a buffer or sensor of intracellular free Ca^{2+}, calretinin promotes calcium homeostasis.[3,4] In the central nervous system (CNS), Ca^{2+} plays a central role in synaptic transmission and axonal transport and both mechanisms require the presence of specific Ca^{2+} binding proteins that exert regulatory functions.[5] The calmodulin family of Ca^{2+} -binding proteins have homologous primary structures, which contain conserved polypeptide folds of the “EF-hand” type for Ca^{2+} binding. Calretinin, most closely resembles calbindin-D-28K, another member of the calmodulin superfamily. These two proteins share 58 % amino acid identity and contain six “EF-hand” conserved Ca^{2+} -binding motifs.[1,2] Calretinin is expressed in certain populations of neurons in the central and peripheral nervous systems. It is abundant in the cerebellum (granule cells), olfactory bulb and auditory pathways.[1,6-8] The physiological function of calretinin is not known, but it seems to be related to Ca^{2+} buffering and diffusion. A role for both calretinin and calbindin-D-28K in synaptic plasticity and in neuroprotection from excitotoxic insults has been postulated. Calretinin-deficient mice show impaired long-term potentiation (LTP) in the dentate gyrus[9] , impaired motor coordination and Purkinje cell excitability.[10] Several colon carcinoma cell lines express calretinin in varying amounts.[11] Calretinin has been suggested as a useful immunocytochemical marker for epithelial malignant mesotheliomas.[12,13] Furthermore, several truncated forms of calretinin have been found in certain tumor cells, but are absent from normal cells, suggesting that calretinin may play a role in tumorigenesis.[14]

Reagent

Anti-Calretinin is supplied as affinity isolated antibody in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide.

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 continuous use, store at 2 °C to 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. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A minimum working dilution of 1:1,000 is determined by immunoblotting using recombinant human calretinin.

A minimum working dilution of 1:1,000 is determined by indirect immunoperoxidase staining of formalin-fixed, paraffin-embedded rat cerebellum sections.

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

References

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