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# Product Information

**Monoclonal Anti-Calbindin-D-28K**
**Clone CB-955**
produced in mouse, ascites fluid,

Catalog Number **C9848**

## Product Description

Monoclonal Anti-Calbindin-D-28K (mouse IgG1 isotype) is derived from the CB-955 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a purified bovine kidney calbindin-D-28K. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Calbindin-D-28K recognizes calbindin-D-28K (28 kDa) using immunoblotting. The product may also be used for ELISA and immunohistochemistry (alcohol-, formalin-, and methacarn-fixed paraffin-embedded, and frozen tissue sections). Enzymatic predigestion of formalin-fixed, paraffin-embedded sections by proteolytic enzymes (e.g., 0.1% trypsin or protease, 10 min., at RT/37 °C) improves immunohistochemical staining with the antibody. The antibody does not react with other members of the EF-hand family such as calbindin-D-9K, calretinin, myosin light chain, parvalbumin, S-100a, S-100b, S100A2 (S100L) and S100A6 (calcyclin). Species cross-reactivity has been observed with human, bovine, goat, sheep, porcine, rabbit, dog, cat, guinea-pig, rat and mouse. A weaker reactivity is observed with chicken calbindin-D-28K.

Calbindin-D-28K (also termed vitamin D- dependent calcium-binding protein, or cholecalcin),[1, 2] is a highly conserved 28 kDa calcium binding protein, with broad tissue distribution.[3] It belongs, together with calmodulin, S-100, parvalbumin, troponin C and other proteins, to a family of low molecular weight calcium-binding proteins (CaBPs). 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 that 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 central nervous system (CNS), $Ca^{2+}$ has an important effect in the synaptic transmission and axonal transport as both mechanisms require the presence of specific CaBPs exerting regulatory roles.[4] Calbindin is an attractive neuroanatomical marker. Despite its broad tissue distribution, calbindin-D-28K exhibits a cell-type-specific expression pattern. Thus, it has been immunocytochemically localized in selected cells in many CNS structures, where it is thought to act either as an intracellualr calcium buffer, or in the intramembranous transport of calcium. It is found predominantly in subpopulations of central and peripheral nervous system neurons, and in certain epithelial cells involved in $Ca^{2+}$ transport such as distal tubular cells and cortical collecting tubules of the kidney, and in enteric neuroendocrine cells.[5,6] Monoclonal antibody reacting specifically with calbindin-D-28K is instrumental in the localization of calbindin in different tissues and cell populations.

## Reagent

Supplied as ascites fluid with 15 mM sodium azide as a preservative.

## Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

## Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze 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 minimum working dilution of 1:3,000 is determined using a whole cell extract of cultured MDBK cells.

Indirect immunoperoxidase staining: a minimum working dilution of 1:3,000 is determined using trypsin-digested, formalin-fixed, paraffin-embedded rat cerebellum sections.

**Note**: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working dilution by titration.

**References**


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