Monoclonal Anti-Calbindin-D (mouse IgG1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Calbindin-D (28 kD) purified from chicken gut was used as the immunogen. The isotype is determined using Sigma ImmunoType™ Kit (Sigma Stock No. ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma Stock No. ISO-2). The product is provided as ascites fluid with 15mM sodium azide (see MSDS)* as a preservative.

**Specificity**
Monoclonal Anti-Calbindin-D reacts specifically with calbindin-D in brain and kidney tissue from human, monkey, rabbit, rat, mouse, chicken, hamster, sheep, guinea pig and fish. The antibody stains the $^{45}$Ca binding spot of calbindin-D (MW = 28,000, pI = 4.8) in a two-dimensional immunoblot. In a RIA the antibody measures calbindin-D with a sensitivity of 10 ng/tube and an affinity of $1.6 \times 10^{12}$ L/mole.

**Working Dilution**
A minimum working dilution of 1:200 is determined by indirect immunoperoxidase staining of formalin-fixed, paraffin-embedded sections of animal tissue using the Mouse ExtrAvidin® Peroxidase Staining Kit (Sigma Stock No. EXTRA-2).

In order to obtain best results, it is recommended that each individual user determine their optimum working dilution by titration assay.

**Description**
Calcium binding proteins represent a family of small acidic proteins equipped with peculiar cavities which accept Ca$^+$ with high selectivity. There are two types of calcium binding proteins, "trigger" and "buffer". Those of the "trigger" type (e.g. calmodulin and troponin-C) act by changing shape upon binding to calcium. This distortion exposes regions on the surface of the protein, which interact with surrounding target molecules altering their activity. The calcium binding proteins of the "buffer" type are conceived as a system which is in charge of controlling the calcium concentration inside certain cells. Calbindin-D occurs only in a subset of neurons and in a few other tissues, where it may confer to these cells peculiar skills in the handling of calcium ions.

**Storage**
For continuous use, store at 2-8 °C for up to one month. For extended storage, the solution may be frozen 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.

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