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ProductInformation

Monoclonal Anti-Ezrin
Clone 3C12
Mouse Ascites Fluid

Product Number **E 8897**

Product Description

Monoclonal Anti-Ezrin (mouse IgG1 isotype) is derived from the 3C12 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. The carboxy-terminal part of recombinant human ezrin (amino acids 362-585) was used as the immunogen.[1, 2] 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-Ezrin recognizes ezrin (80 kDa) using immunoblotting,[2, 3] immunocytochemistry,[2, 9, 10] immunohistochemistry (routine formalin-fixed and paraffin-embedded),[2] electron microscopsy,[9,10] and immunoprecipitation, Cross-reactivity is observed with human,[1-3] monkey, bovine, rat, kangaroo, hamster, and mouse.[2]

Ezrin [4] (also known as cytovillin,[5] p81,[6] and 80K [7]) is a 80 kDa membrane-associated protein that is enriched in some surface structures that contain an F-actin cytoskeleton. It is present in microvilli, microspikes, and membrane ruffles of cultured cells, in placental microvilli, in growth cones of cultured neurons, and in the marginal band of avian erythrocytes. Ezrin is also present in the microvillus surface of acid-secreting parietal cells of the gastric glands, where it presents as a family of isoelectric variants. By immunoelectron microscopy of human choriocarcinoma cells, ezrin is enriched just inside the plasma membrane of microvilli and less abundant on more planar aspects of the membrane.

The ezrin protein family (also called ERM family) has a potentially important role at the cortical cytoskeleton, and may participate in the regulation of several cellular functions.[1,8] Based on the homologies in amino acid sequence with other cytoskeletal proteins, it has been suggested that ezrin links the cytoskeleton to the plasma membrane.

The NH_2-terminal domain of ezrin shows 37% identity to erythrocyte protein band 4.1, and 23% identity to talin. Both protein 4.1 and talin are linker proteins at the cortical cytoskeleton. Accordingly, in ezrin the amino-terminal domain is localized to membranes and the carboxy-terminal part, containing the α-helical domain, colocalizes with actin filaments. In addition, several other proteins have been identified that share a strikingly high homology to ezrin. These include radixin, moesin, merlin/schwannomin, and EM10 of *Echinococcus multilocularis*, which are 75, 73, 48, and 43% identical to ezrin, respectively.[1] The proteins of the ezrin family serve as tyrosine kinase phosphorylation substrates. They exhibit a growth factor receptor-specific pattern of phosphorylation. Ezrin is phosphorylated by epidermal growth factor receptor and platelet-derived growth factor receptor. Some of the growth factor-dependent regulatory functions on the cell may be mediated via ezrin and its interaction with actin.

Most cultured cells and cell lines express ezrin, usually located under the cell membranes of microvilli and other cellular protrusions.[2] The *in vivo* distribution of ezrin is more tissue and cell specific. By immunocyto-chemistry, it has been shown that epithelial cells and mesothelial cells express ezrin, but endothelial cells and several mesenchymal tissues do not express it. Cultured neuronal cells do express it to some extent, and whole brain tissue expresses low levels of ezrin.[2]

Reagents

Monoclonal Anti-Ezrin is provided as ascites fluid with 15 mM 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 your 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 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.

Product Profile
A minimum working dilution of 1:4,000 is determined by immunoblotting using a cultured human fibroblast cell line extract.

In order to obtain best results, it is recommended that each user determine the optimal working dilution for individual applications by titration assay.

References

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