

Product Information

Monoclonal Anti-Talin, clone 8d4

produced in mouse, ascites fluid

Catalog Number **T3287**

Product Description

Monoclonal Anti-Talin (mouse IgG1 isotype) is derived from the 8d4 hybridoma¹ produced by the fusion of mouse myeloma cells and splenocytes from immunized BALB/c mice. The cytoskeletal protein talin, purified from chicken gizzard, was used as the immunogen. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Talin recognizes an epitope located on the intact talin molecule (225 kDa) and the 190 kDa fragment, but not on the 47 kDa fragment obtained by protease cleavage of chicken gizzard talin, when used in immunoblotting. It also stains a slightly higher molecular mass talin (235 kDa) of mammalian platelets. The antibody stains focal adhesions, the membrane ruffles, and ventral streaks in cultured fibroblasts of mammalian (human, rat), avian (chicken), and amphibian (*Xenopus*), but not fish in indirect immunofluorescence.¹

Monoclonal Anti-Talin may be used for the localization of talin using various immunochemical assays such as immunoblot, immunocytochemistry, and for microinjection and transfection studies. The antibody recognizes native talin and can be used for immunoprecipitation.

Talin,^{2,3} a multifunctional constituent of cell-substratum attachment sites, is a high molecular mass protein (225–235 kDa) found in variety of tissues and cell types. It is localized at a subset of adherens junctions, specialized cell-cell and cell-matrix associations that are characterized by the presence of filamentous actin at the cytoplasmic face of the junctional complex. In cultured cells, talin is absent from cell-cell junctions and found predominantly at adhesion plaques and in fibrillar streaks underlying cell surface fibronectin.

Talin interacts with at least two other proteins that are localized at adhesion plaques, vinculin⁴ and integrin.⁵ Talin and vinculin have been shown to interact with each other and both have been proposed to be involved in generating the transmembrane connection, between the extracellular matrix and the cytoskeleton, that occurs at adhesion plaques.

At physiological ionic strength, talin is an elongated, flexible, monomeric protein with the ability to self-associate into dimers at higher protein concentrations. Talin can be modified post-translationally by phosphorylation and by proteolytic cleavage by calcium-dependent proteases, which cleave it to generate two prominent proteolytic fragments of 190–200 and 47 kDa. Mammalian, avian, amphibian, and fish talins exhibit some species-specific differences. Thus for instance, talin isolated from mammalian platelets has a slightly higher molecular mass (235 kDa) than chicken gizzard talin (225 kDa). Polyclonal antibodies to talin display some species selectivity, antibodies raised against mammalian talin react poorly with avian talin. A monoclonal antibody that reacts with talin derived from a wide range of species (from amphibians to mammals) can be a substantial tool for localization of talin in various species and for microinjection and transfection studies.

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

Store at -20°C . For continuous use, the product may be stored at $2-8^{\circ}\text{C}$ for up to one month. For extended storage, freeze in working aliquots -20°C . 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.

Product Profile

Indirect immunofluorescence: a minimum antibody titer of 1:500 was determined using cultured Rat2 cells.

Immunoblotting: a minimum antibody titer of 1:100 was determined using chicken gizzard extract .

Note: In order to obtain the best results in various techniques and preparations, it is recommended that each individual user determine their optimum working dilutions by titration.

References

1. Otey, C., et al., *Hybridoma*, **9**, 57 (1990).
2. Burridge, K., and Connell, L., *Cell Motility*, **3**, 405 (1983).
3. Beckerle, M., and Yeh, R., *Cell Motil. Cytoskeleton*, **16**, 7 (1990).
4. Volberg, T., et al., *Differentiation*, **32**, 34 (1986).
5. Fath, K., et al., *J. Cell Sci.*, **92**, 67 (1989).

DS,KAA,PHC 10/14-1