

Talin (8D4): sc-59881

BACKGROUND

Focal adhesions were identified as areas within the plasma membrane of tissue culture cells that adhere tightly to the underlying substrate. *In vivo*, these regions are involved in the adhesion of cells to the extracellular matrix. Paxillin and vinculin are cytoskeletal, focal adhesion proteins that are components of a protein complex that links the actin network to the plasma membrane. Vinculin binding sites have been identified on other cytoskeletal proteins, including Talin-1 and α -actinin. In addition, vinculin, Talin-1, Talin-2 and α -actinin each contain actin binding sites. Expression of vinculin, Talin-1 and Talin-2 have been shown to be affected by the level of actin expression. α -actinin has been shown to link actin to integrins in the plasma membrane through interactions with the vinculin and Talin complex or by a direct interaction with integrin. Talin-2 is similar to Talin-1 but shows distinct patterns of expression and cannot compensate for the loss of Talin-1.

REFERENCES

- Burridge, K., et al. 1988. Focal adhesions: transmembrane junctions between the extracellular matrix and the cytoskeleton. *Annu. Rev. Cell Biol.* 4: 487-525.
- Gilmore, A.P., et al. 1992. Further characterization of the Talin-binding site in the cytoskeletal protein vinculin. *J. Cell Sci.* 103: 719-731.
- Wood, C.K., et al. 1994. Characterisation of the paxillin-binding site and the C-terminal focal adhesion targeting sequence in vinculin. *J. Cell Sci.* 107: 709-717.
- Gluck, U., et al. 1994. Modulation of α -actinin levels affects cell motility and confers tumorigenicity on 3T3 cells. *J. Cell Sci.* 107: 1773-1782.
- Schevzov, G., et al. 1995. Impact of Actin gene expression on vinculin, Talin, cell spreading, and motility. *DNA Cell Biol.* 14: 689-700.
- Hemmings, L., et al. 1996. Talin contains three actin-binding sites each of which is adjacent to a vinculin-binding site. *J. Cell Sci.* 109: 2715-2726.
- Gilmore, A.P., et al. 1996. Regulation of vinculin binding to Talin and actin by phosphatidylinositol-4-5-bisphosphate. *Nature* 381: 531-535.
- Franco, S.J., et al. 2006. The conserved C-terminal I/LWEQ module targets Talin1 to focal adhesions. *Cell Motil. Cytoskeleton* 63: 563-581.

CHROMOSOMAL LOCATION

Genetic locus: TLN2 (human) mapping to 15q22.2; Tln2 (mouse) mapping to 9 C.

SOURCE

Talin (8D4) is a mouse monoclonal antibody raised against cytoskeletal Talin of chicken origin.

PRODUCT

Each vial contains 50 μ l ascites containing IgG₁ with < 0.1% sodium azide.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

Talin (8D4) is recommended for detection of the intact Talin molecule and the proteolytic cleaved 190 kDa fragment of mouse, rat, human, avian and *Xenopus* origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 μ l per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500); not recommended for detection of the 47 kDa fragment obtained by proteolytic cleavage of chicken gizzard Talin.

Molecular Weight of Talin: 230 kDa.

Positive Controls: CCD-1064Sk cell lysate: sc-2263, Hs68 cell lysate: sc-2230 or Jurkat whole cell lysate: sc-2204.

SELECT PRODUCT CITATIONS

- Shen, Y., et al. 2013. Integrins-FAK-Rho GTPases pathway in endothelial cells sense and response to surface wettability of plasma nanocoatings. *ACS Appl. Mater. Interfaces* 5: 5112-5121.
- Yu, H., et al. 2013. Interleukin-8 regulates endothelial permeability by down-regulation of tight junction but not dependent on integrins induced focal adhesions. *Int. J. Biol. Sci.* 9: 966-979.
- Shen, Y., et al. 2015. Effect of surface chemistry on the integrin induced pathway in regulating vascular endothelial cells migration. *Colloids Surf. B Biointerfaces* 126: 188-197.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

For research use only, not for use in diagnostic procedures.



See **Talin (C-9): sc-365875** for Talin antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.