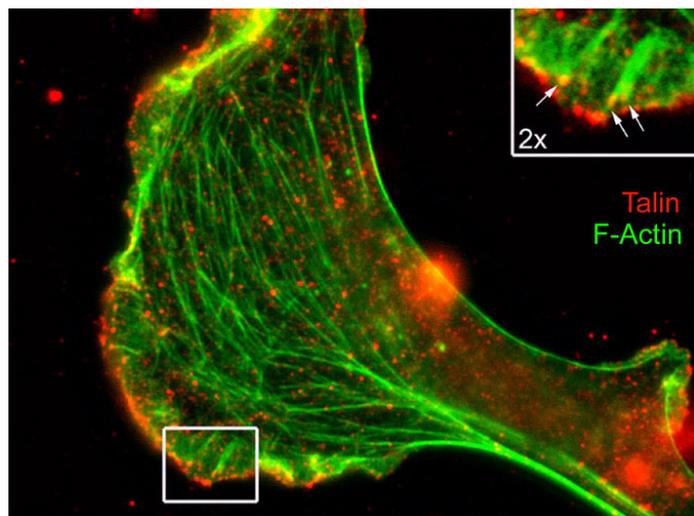


Background

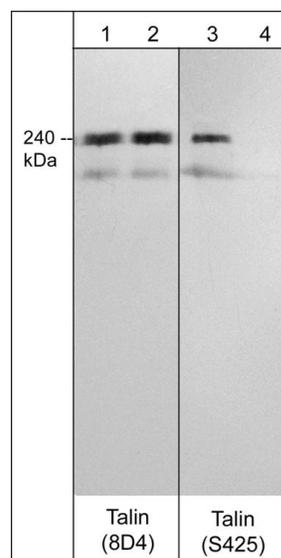
Talin is an important cytoskeletal component of integrin adhesion sites. Calpains cleave talin precursor (240 kDa) into an amino-terminal globular head domain of 47 kDa and a carboxyl-terminal 190 kDa rod domain. The talin head domain contains a FERM domain that binds integrins, PIP kinase (Type I), and FAK. The rod domain has several vinculin-binding sites, a second integrin-binding site, and two actin-binding sites. These talin protein-protein interactions are critical for integrin activation, focal adhesion formation, and cell migration. Talin regulation may occur through phosphorylation and regulated degradation. The talin head domain binds Smurf1, an E3 ubiquitin ligase, and this interaction leads to talin head ubiquitylation and degradation. Cdk5 can phosphorylate Ser-425 in the head domain, and this inhibits both binding to Smurf1 and subsequent degradation. The S425A talin mutant resists Cdk5 phosphorylation, increases susceptibility to Smurf1-mediated ubiquitylation, and inhibits cell migration. Thus, talin head phosphorylation may be important for regulating adhesion stability and cell migration.

Background References

- Ratnikov, B. et al. (2005) *J. Cell Sci.* 118:4921.
 Huang, C. et al. (2009) *Nat Cell Biol.* 11(5):624.
 Moser, M. et al. (2009) *Science.* 324(5929):895.



Immunocytochemical labeling of Talin relative to F-actin in chick fibroblasts. The cells were labeled with mouse monoclonal Talin (Rod domain) antibody (TM4081), then the antibody was detected using appropriate secondary antibody (Red). This labeling is compared to F-actin staining (Green). (Image provided by Dr. Gianluca Gallo at Drexel University).



Western blot of rat PC12 cells stimulated with Calyculin A (100 nM) for 30 min (lanes 1-4). The blot was treated with lambda phosphatase (lanes 2 & 4), then probed with mouse monoclonal anti-Talin (8D4) (lanes 1 & 2) or rabbit polyclonal anti-Talin (Ser-425) (lanes 3 & 4) antibodies.

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Immunogen **Uniprot ID: Q9Y490**

Clone 8D4 was generated from purified chicken gizzard talin. The antibody recognizes an epitope within the rod domain of talin from many species, including human, rat, mouse, chicken, and frog.

Buffer and Storage

Mouse monoclonal antibody purified with protein A chromatography is supplied in 100µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Applications

WB	1:1000
ICC	1:100
IP	1:100
ELISA	1:2000

Species Reactivity

Hu, Rt, Ms, Ck, F

Isotype: IgG1

End user should determine optimal dilution for their particular applications and experiments.

Western blot membranes were incubated with diluted antibody in 5% non-fat milk, Tris buffer, 0.04% Tween20 for 1 hour at room temperature.

Abbreviations: E = ELISA, ICC = immunocytochemistry, IHC = immunohistochemistry, IP = immunoprecipitation, MS = mass spectrometry, WB = western blot
Hu = Human, Ms = Mouse, Rt = Rat, Ck = Chicken, F = Frog, B = Bovine

Specificity

The antibody detects a 240 kDa* protein corresponding to the molecular mass of Talin on SDS-PAGE immunoblots of human A431, rat PC12, and rabbit fibroblast cells.

*All molecular weights (MW) are confirmed by comparison to MW standards and to western blot mobilities of known proteins with similar MW.

"Native" western blot utilizes non-reducing sample buffer (no mercaptoethanol or SDS), normal SDS-PAGE gel electrophoresis, and no methanol in transfer buffers.

Related Products

- TP4171 Talin (Ser-425), phospho-specific Rabbit Polyclonal
- AK6060 Actin & Tubulin Antibody Sampler Kit
- IK6270 Integrin β4 Phospho-Regulation Antibody Sampler Kit
- PK6070 Paxillin Phospho-Regulation Antibody Sampler Kit
- FM1211 FAK (Tyr-397), phospho-specific Mouse Monoclonal
- FM2461 FAK (Central region) Mouse Monoclonal

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