

p-Adducin α (Ser 726): sc-101627

BACKGROUND

Adducins are a family of cytoskeleton proteins encoded by three genes (α , β and γ). Adducin is a protein associated with the inner leaflet of the plasma membrane and is one of the proteins localized at the spectrin-Actin junction of the membrane skeleton. Adducins promote association of spectrin with Actin and cap the fast growing end of Actin filaments. Adducins contain an N-terminal core, neck and C-terminal tail domains, are substrates for protein kinase A (PKA) and C (PKC), and bind to Ca^{2+} /calmodulin. The major phosphorylation sites common to the Adducins are Ser 726 and Ser 713 in the C-terminal MARCKS-related domains of Adducin α and Adducin β , and they are phosphorylated by PKA and PKC, respectively. In addition, PKA phosphorylates Adducin α at Ser 408, 436 and 481. Calmodulin-binding is inhibited by phosphorylation of Adducin β that, in turn, inhibits the rate of phosphorylation of Adducin β , but not Adducin α . Rho-kinase can phosphorylate Adducin α at Thr 445 and Thr 480 downstream of Rho *in vivo*. The phosphorylation of Adducin by Rho-kinase plays an important role in the regulation of membrane ruffling and cell motility. In addition, phosphorylation at Ser 726 of Adducin α is required for cleavage by caspase-3.

REFERENCES

1. Matsuoka, Y., et al. 1996. Adducin regulation. Definition of the calmodulin-binding domain and sites of phosphorylation by protein kinases A and C. *J. Biol. Chem.* 271: 25157-25166.
2. Gilligan, D.M., et al. 1999. Targeted disruption of the β Adducin gene (Add2) causes red blood cell spherocytosis in mice. *Proc. Natl. Acad. Sci. USA* 96: 10717-10722.
3. Muro, A.F., et al. 2000. Mild spherocytic hereditary elliptocytosis and altered levels of α - and γ -Adducins in β -Adducin-deficient mice. *Blood* 95: 3978-3985.
4. Psatry, B.M., et al. 2000. Association of the α -Adducin polymorphism with blood pressure and risk of myocardial infarction. *J. Hum. Hypertens.* 14: 95-97.
5. van de Water, B., et al. 2000. Cleavage of the Actin-capping protein α -Adducin at Asp-Asp-Ser-Asp633-Ala by caspase-3 is preceded by its phosphorylation on Serine 726 in cisplatin-induced apoptosis of renal epithelial cells. *J. Biol. Chem.* 275: 25805-25813.

CHROMOSOMAL LOCATION

Genetic locus: ADD1 (human) mapping to 4p16.3; Add1 (mouse) mapping to 5 B2.

SOURCE

p-Adducin α (Ser 726) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 726 of Adducin α of human origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

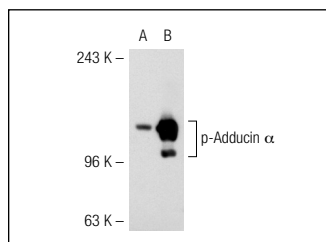
p-Adducin α (Ser 726) is recommended for detection of Ser 726 phosphorylated Adducin α of human origin and correspondingly phosphorylated Ser 724 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 μ g per 100–500 μ g of total protein (1 ml of cell lysate)], immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Adducin α siRNA (h): sc-43253, Adducin α siRNA (m): sc-43254, Adducin α shRNA Plasmid (h): sc-43253-SH, Adducin α shRNA Plasmid (m): sc-43254-SH, Adducin α shRNA (h) Lentiviral Particles: sc-43253-V and Adducin α shRNA (m) Lentiviral Particles: sc-43254-V.

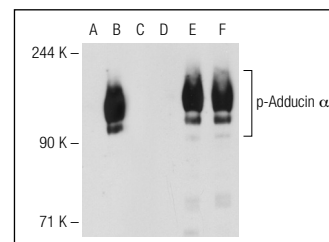
Molecular Weight of p-Adducin α : 120 kDa.

Positive Controls: Adducin α (m): 293T Lysate: sc-118250 or doxorubicin-treated HT-29 whole cell lysate.

DATA



p-Adducin α (Ser 726): sc-101627. Western blot analysis of Adducin α phosphorylation in non-transfected: sc-117752 (A, D), untreated mouse 293T: sc-117752 (A) and mouse Adducin α transfected 293T: sc-118250 (B).



Western blot analysis of Adducin α phosphorylation in non-transfected: sc-117752 (A, D), untreated mouse Adducin α transfected: sc-118250 (B, E) and lambda protein phosphatase (sc-200312A) treated mouse Adducin α transfected: sc-118250 (C, F) 293T whole cell lysates. Antibodies tested include p-Adducin α (Ser 726): sc-101627 (A, B, C) and Adducin α (4D1): sc-33633 (D, E, F).

RESEARCH USE

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

PROTOCOLS

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