SANTA CRUZ BIOTECHNOLOGY, INC.

Cas-L (14A11): sc-33657

BACKGROUND

Cas family proteins are adhesion docking molecules that mediate protein-protein interactions and contribute to a number of signal transduction pathways. Cas-L (also designated human enhancer of filamentation (HEF1) and neural precursor cell expressed, developmentally down-regulated 9 (NEDD9), participates in integrin and growth factor signaling pathways that regulate growth, motility and apoptosis. Cas-L consists of two isoforms, p105 and p115. The larger molecular weight form is a result of Ser/Thr phosphorylation. Cas-L phosphorylation is dependent on cell adhesion and Src kinase activity. Cas-L acts as a downstream effector of FAK in the invasive behavior of glioblastoma cells. TGFβ1 regulates Cas-L gene expression and influences phosphorylation. Adhesion-dependent Actin organization regulates proteasomal turnover of Cas-L through the activity of PP2A. Tyrosine phosphorylated Cas-L can bind FAK in dendrite and soma of neurons after ischemia. Cas-L can promote neurite outgrowth of PC-12 cells.

REFERENCES

1. Law, S.F., et al. 2000. The docking protein HEF1 is an apoptotic mediator at focal adhesion sites. Mol. Cell. Biol. 20: 5184-5195.
2. Liu, X., et al. 2000. A novel ability of Smad3 to regulate proteasomal degradation of a Cas family member HEF1. EMBO J. 19: 6759-6769.
3. Zheng, M., et al. 2002. Regulation of HEF1 expression and phosphorylation by TGFβ1 and cell adhesion. J. Biol. Chem. 277: 39599-39608.
4. Iwata, S., et al. 2005. HTLV-I Tax induces and associates with Crk-associated substrate lymphocyte type (Cas-L). Oncogene 24: 1262-1271.
5. Pugacheva, E.N., et al. 2005. The focal adhesion scaffolding protein HEF1 regulates activation of the Aurora-A and Nek2 kinases at the centrosome. Nat. Cell Biol. 7: 937-946.
6. Sasaki, T., et al. 2005. NEDD9 protein, a Cas-L homologue, is upregulated after transient global ischemia in rats: possible involvement of NEDD9 in the differentiation of neurons after ischemia. Stroke 36: 2457-2462.
7. Natarajan, M., et al. 2006. HEF1 is a necessary and specific downstream effector of FAK that promotes the migration of glioblastoma cells. Oncogene 25: 1721-1732.
8. Zheng, M., et al. 2006. Cell adhesion regulates Ser/Thr phosphorylation and proteasomal degradation of HEF1. J. Cell Sci. 119: 96-103.
9. Dadke, D., et al. 2006. Deregulation of HEF1 impairs M-phase progression by disrupting the RhoA activation cycle. Mol. Biol. Cell 17: 1204-1217.

CHROMOSOMAL LOCATION

Genetic locus: NEDD9 (human) mapping to 6p24.2, BCAR1 (human) mapping to 16q23.1.

SOURCE

Cas-L (14A11) is a mouse monoclonal antibody raised against amino acids 82-398 of Cas-L of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cas-L (14A11) is recommended for detection of Cas-L and p130 Cas of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

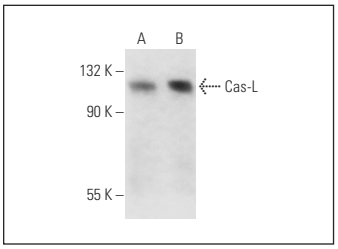
Molecular Weight of Cas-L: 105 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, HuT 78 whole cell lysate: sc-2208 or Cas-L (h2): 293T Lysate: sc-159485.

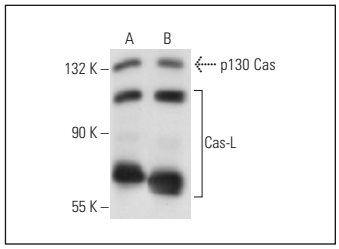
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Cas-L (14A11): sc-33657. Western blot analysis of Cas-L expression in non-transfected: sc-117752 (**A**) and human Cas-L transfected: sc-159485 (**B**) 293T whole cell lysates.



Cas-L (14A11): sc-33657. Western blot analysis of Cas expression in MCF7 (**A**) and HuT 78 (**B**) whole cell lysates. Note presence of C-terminal cleavage product.

SELECT PRODUCT CITATIONS

1. Shah, K.N., et al. 2019. Aurora kinase A drives the evolution of resistance to third-generation EGFR inhibitors in lung cancer. Nat. Med. 25: 111-118.

STORAGE

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

RESEARCH USE

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