SANTA CRUZ BIOTECHNOLOGY, INC.

JTV1 (N-15): sc-160454

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The fidelity of protein synthesis requires efficient discrimination of amino acid substrates by aminoacyl-tRNA synthetases. Aminoacyl-tRNA synthetases function to catalyze the aminoacylation of tRNAs by their corresponding amino acids, thus linking amino acids with tRNA-contained nucleotide triplets. JTV1, also known as P38 or AIMP2 (aminoacyl tRNA synthetase complex-interacting multifunctional protein 2), is a 320 amino acid nuclear and cytoplasmic protein that is a component of the aminoacyl-tRNA synthase complex. Containing one GST C-terminal domain, JTV1 mediates ubiquitination and degradation of FBP1, a transcriptional activator of c-Myc, leading to c-Myc down-regulation, which is required for aveolar type II cell differentiation. JTV1 also participates in blocking MDM2-mediated ubiquitination, degradation of p53 and functions as a proapoptotic factor.

REFERENCES

1. Quevillon, S., et al. 1999. Macromolecular assemblage of aminoacyl-tRNA synthetases: identification of protein-protein interactions and characterization of a core protein. J. Mol. Biol. 285: 183-195.
2. Kim, M.J., et al. 2003. Downregulation of FUSE-binding protein and c-Myc by tRNA synthetase cofactor p38 is required for lung cell differentiation. Nat. Genet. 34: 330-336.
3. Halwani, R., et al. 2004. Cellular distribution of Lysyl-tRNA synthetase and its interaction with Gag during human immunodeficiency virus type 1 assembly. J. Virol. 78: 7553-7564.
4. Ko, H.S., et al. 2005. Accumulation of the authentic parkin substrate aminoacyl-tRNA synthetase cofactor, p38/JTV-1, leads to catecholaminergic cell death. J. Neurosci. 25: 7968-7978.
5. Han, J.M., et al. 2008. AIMP2/p38, the scaffold for the multi-tRNA synthetase complex, responds to genotoxic stresses via p53. Proc. Natl. Acad. Sci. USA 105: 11206-11211.
7. Choi, J.W., et al. 2009. AIMP2 promotes TNFα-dependent apoptosis via ubiquitin-mediated degradation of TRAF2. J. Cell Sci. 122: 2710-2715.

CHROMOSOMAL LOCATION

Genetic locus: AIMP2 (human) mapping to 7p22.1; Aimp2 (mouse) mapping to 5 G2.

SOURCE

JTV1 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of JTV1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160454 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

JTV1 (N-15) is recommended for detection of JTV1 of mouse, rat and 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

JTV1 (N-15) is also recommended for detection of JTV1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for JTV1 siRNA (h): sc-89346, JTV1 siRNA (m): sc-146335, JTV1 shRNA Plasmid (h): sc-89346-SH, JTV1 shRNA Plasmid (m): sc-146335-SH, JTV1 shRNA (h) Lentiviral Particles: sc-89346-V and JTV1 shRNA (m) Lentiviral Particles: sc-146335-V.

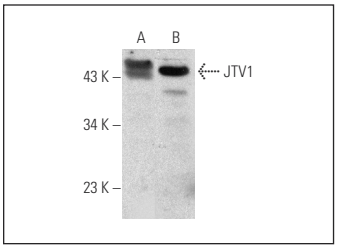
Molecular Weight of JTV1: 35 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, SK-BR-3 cell lysate: sc-2218 or LADMAC whole cell lysate: sc-364189.

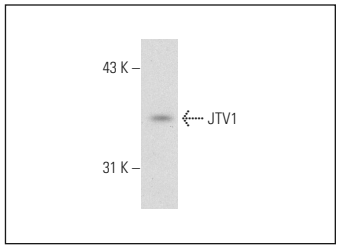
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



JTV1 (N-15): sc-160454. Western blot analysis of JTV1 expression in SK-BR-3 (**A**) and LADMAC (**B**) whole cell lysates.



JTV1 (N-15): sc-160454. Western blot analysis of JTV1 expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Gao, S., et al. 2015. Interaction of NS2 with AIMP2 facilitates the switch from ubiquitination to SUMOylation of M1 in influenza A virus-infected cells. J. Virol. 89: 300-311.

STORAGE

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