

JTV1 (S-14): sc-160455

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

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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.
6. Choi, J.W., et al. 2009. Multidirectional tumor-suppressive activity of AIMP2/p38 and the enhanced susceptibility of AIMP2 heterozygous mice to carcinogenesis. *Carcinogenesis* 30: 1638-1644.
7. Choi, J.W., et al. 2009. AIMP2 promotes TNF α -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 (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of JTV1 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 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160455 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

JTV1 (S-14) 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 μ g per 100-500 μ g 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).

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.

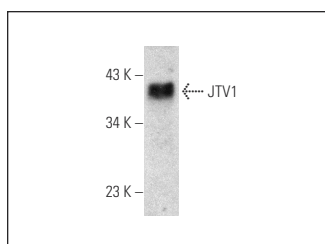
Molecular Weight of JTV1: 35 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226, K-562 whole cell lysate: sc-2203 or SK-BR-3 cell lysate: sc-2218.

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 (S-14): sc-160455. Western blot analysis of JTV1 expression in COLO 320DM whole cell lysate.

RESEARCH USE

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