

USP6/32 (K-14): sc-48694

BACKGROUND

Ubiquitin-specific protease (USP6) is a 1,406 amino acid protein that is very hydrophilic and has two charge clusters that are characteristic of nucleic acid-binding regions. The USP6 gene is oncogenic and originated from the chimeric fusion of two genes: USP32 and TBC1D3. USP32 is an ancient, highly conserved gene, whereas the TBC1D3 gene came from a relatively recent segmental duplication. This duplication is absent in most other mammals and shows rapid amplification and propagation throughout the primate lineage. The chimeric USP6, however, only exists in the hominoid lineage of primates, so it may have contributed to hominoid speciation. USP6 is testis-specific, suggesting an implication in the emergence of reproductive barriers.

REFERENCES

- White, R.A., Pasztor, L.M., Richardson, P.M. and Zon, L.I. 2000. The gene encoding TBC1D1 with homology to the Tre2/USP6 oncogene, BUB2, and cdc16 maps to mouse chromosome 5 and human chromosome 4. *Cytogenet. Cell Genet.* 89: 272-275.
- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604334. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Paulding, C.A., Ruvolo, M. and Haber, D.A. 2003. The Tre2/USP6 oncogene is a hominoid-specific gene. *Proc. Natl. Acad. Sci. USA* 100: 2507-2511.
- Oliveira, A.M., Hsi, B.L., Weremowicz, S., Rosenberg, A.E., Dal Cin, P., Joseph, N., Bridge, J.A., Perez-Atayde, A.R. and Fletcher, J.A. 2004. USP6/Tre2 fusion oncogenes in aneurysmal bone cyst. *Cancer Res.* 64: 1920-1923.
- Oliveira, A.M., Perez-Atayde, A.R., Inwards, C.Y., Medeiros, F., Derr, V., Hsi, B.L., Gebhardt, M.C., Rosenberg, A.E. and Fletcher, J.A. 2004. USP6 and CDH11 oncogenes identify the neoplastic cell in primary aneurysm bone cysts and are absent in so-called secondary aneurysmal bone cysts. *Am. J. Pathol.* 165: 1773-1780.
- Oliveira, A.M., Perez-Atayde, A.R., Dal Cin, P., Gebhardt, M.C., Chen, C.J., Neff, J.R., Demetri, G.D., Rosenberg, A.E., Bridge, J.A. and Fletcher, J.A. 2005. Aneurysmal bone cyst variant translocations upregulate USP6 transcription by promoter swapping with the ZNF9, COL1A1, TRAP150 and OMD genes. *Oncogene* 24: 3419-3426.
- Shen, C., Ye, Y., Robertson, S.E., Lau, A.W., Mak, D.O. and Chou, M.M. 2005. Calcium/calmodulin regulates ubiquitination of the ubiquitin-specific protease Tre17/USP6. *J. Biol. Chem.* 280: 35967-35973.
- Oliveira, A.M., Chou, M.M., Perez-Atayde, A.R. and Rosenberg, A.E. 2006. Aneurysmal bone cyst: a neoplasm driven by upregulation of the USP6 oncogene. *J. Clin. Oncol.* 24: e1-e2.
- Ou, Z., Jarmuz, M., Sparagana, S.P., Michaud, J., Decarie, J.C., Yatsenko, S.A., Nowakowska, B., Furman, P., Shaw, C.A., Shaffer, L.G., Lupski, J.R., Chinault, A.C., Cheung, S.W. and Stankiewicz, P. 2006. Evidence for involvement of Tre2/USP6 oncogene, low-copy repeat and acrocentric heterochromatin in two families with chromosomal translocations. *Hum. Genet.* 120: 227-237.

CHROMOSOMAL LOCATION

Genetic locus: USP6 (human) mapping to 17p13.2, USP32 (human) mapping to 17q23.1.

SOURCE

USP6/32 (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of USP6 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-48694 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

USP6/32 (K-14) is recommended for detection of USP6 and USP32 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

USP6/32 (K-14) is also recommended for detection of USP6 and USP32 in additional species, including equine, canine, bovine and avian.

Molecular Weight of USP6: 159 kDa.

Molecular Weight of USP32: 182 kDa.

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) 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.

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.

MONOS
Satisfaction
Guaranteed

Try **USP6/32 (D-11): sc-377306** or **USP32 (A-10): sc-374465**, our highly recommended monoclonal alternatives to USP6/32 (K-14).