SANTA CRUZ BIOTECHNOLOGY, INC.

USP43 (H-10): sc-393895

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The ubiquitin (Ub) pathway involves three sequential enzymatic steps that facilitate the conjugation of Ub and Ub-like molecules to specific protein substrates. Through the use of a wide range of enzymes that can add or remove ubiquitin, the Ub pathway controls many intracellular processes such as signal transduction, transcriptional activation and cell cycle progression. USP43 (ubiquitin specific peptidase 43), also known as deubiquitinating enzyme 43 or ubiquitin thioesterase 43, is a 1,124 amino acid protein belonging to the peptidase C19 family. USP43 hydrolyzes the peptide bond of C-terminal glycine of ubiquitin, and plays an important role in the processing of ubiquinated proteins and poly-ubiquitin precursors. Expressed at low levels in lung, aorta and brain, USP43 is encoded by a gene mapping to human chromosome 17p13.1. Three USP43 isoforms exist as a result of alternative splicing events.

REFERENCES

1. Fischer, J.A. 2003. Deubiquitinating enzymes: their roles in development, differentiation, and disease. Int. Rev. Cytol. 229: 43-72.
2. Puente, X.S., et al. 2003. Human and mouse proteases: a comparative genomic approach. Nat. Rev. Genet. 4: 544-558.
3. Quesada, V., et al. 2004. Cloning and enzymatic analysis of 22 novel human ubiquitin-specific proteases. Biochem. Biophys. Res. Commun. 314: 54-62.
4. Kimura, K., et al. 2006. Diversification of transcriptional modulation: large-scale identification and characterization of putative alternative promoters of human genes. Genome Res. 16: 55-65.
5. Lehman, N.L. 2009. The ubiquitin proteasome system in neuropathology. Acta Neuropathol. 118: 329-347.
6. Ye, Y., et al. 2009. Dissection of USP catalytic domains reveals five common insertion points. Mol. Biosyst. 5: 1797-1808.

CHROMOSOMAL LOCATION

Genetic locus: USP43 (human) mapping to 17p13.1; Usp43 (mouse) mapping to 11 B3.

SOURCE

USP43 (H-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1094-1115 at the C-terminus of USP43 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.

Blocking peptide available for competition studies, sc-393895 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

USP43 (H-10) is recommended for detection of USP43 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for USP43 siRNA (h): sc-76855, USP43 siRNA (m): sc-76856, USP43 shRNA Plasmid (h): sc-76855-SH, USP43 shRNA Plasmid (m): sc-76856-SH, USP43 shRNA (h) Lentiviral Particles: sc-76855-V and USP43 shRNA (m) Lentiviral Particles: sc-76856-V.

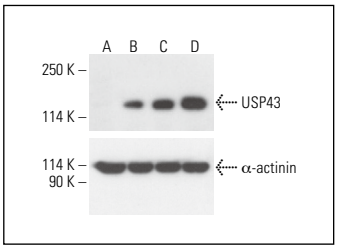
Molecular Weight of USP43: 123 kDa.

Positive Controls: chemically-treated K-562 whole cell lysate or chemically-treated Jurkat whole cell lysate.

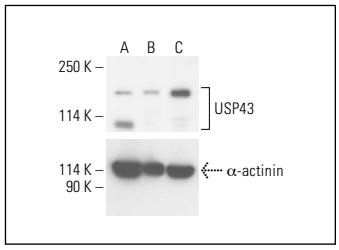
RECOMMENDED SUPPORT REAGENTS

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



USP43 (H-10): sc-393895. Western blot analysis of USP43 expression in untreated (**A**) and chemically-treated (**B**, **C**, **D**) Jurkat whole cell lysates. Detection reagent used: m-IgG_{2b} BP-HRP: sc-542741. α-actinin (H-2): sc-17829 used as loading control. Detection reagent used: m-IgG_1 BP-HRP: sc-525408.



USP43 (H-10): sc-393895. Western blot analysis of USP43 expression in untreated (**A**) and chemically-treated (**B**, **C**) K-562 whole cell lysates. Detection reagent used: m-IgG_{2b} BP-HRP: sc-542741.α-actinin (H-2): sc-17829 used as loading control. Detection reagent used: m-IgG_1 BP-HRP: sc-525408.

SELECT PRODUCT CITATIONS

1. Yadav, S.K., et al. 2020. MMP9 mediates acute hyperglycemia-induced human cardiac stem cell death by upregulating apoptosis and pyroptosis *in vitro*. Cell Death Dis. 11: 186.

RESEARCH USE

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