

# USF-1 (J-39): sc-101197

## BACKGROUND

The ubiquitously expressed cellular upstream stimulatory factor (USF) consists of (USF-1) and (USF-2) polypeptides which independently exhibit site-specific DNA binding and are members of the c-Myc-related family of regulatory factors containing helix-loop-helix domains. USF also contains a leucine repeat that is required for efficient DNA binding. USF was originally identified as an upstream stimulatory factor that binds the core sequence CACGTG in the adenovirus late promoter. These findings, together with the demonstration of cooperative interaction between USF and the initiator-binding protein, TFII-I, raises the possibility of a more general involvement of USF in transcriptional regulation. While expression of both USF-1 and USF-2 species is ubiquitous, different ratios of USF homo- and heterodimers are found in different cell types.

## REFERENCES

1. Sawadogo, M., et al. 1985. Interaction of a gene-specific transcription factor with the adenovirus major late promoter upstream of the TATA box region. *Cell* 43: 165-175.
2. Carthew, R.W., et al. 1985. An RNA polymerase II transcription factor binds to an upstream element in the adenovirus major late promoter. *Cell* 43: 439-448.
3. Sawadogo, M., et al. 1988. Multiple forms of the human gene-specific transcription factor USF-1. Complete purification and identification of USF from HeLa cell nuclei. *J. Biol. Chem.* 263: 11985-11993.
4. Gregor, P.D., et al. 1990. The adenovirus major late transcription factor USF is a member of the helix-loop-helix group of regulatory proteins and binds to DNA as a dimer. *Genes Dev.* 4: 1730-1740.
5. Beckmann, H., et al. 1991. The leucine zipper of TFE3 dictates helix-loop-helix dimerization specificity. *Genes Dev.* 5: 1057-1066.
6. Roy, A.L., et al. 1991. Cooperative interaction of an initiator-binding transcription initiation factor and the helix-loop-helix activator USF. *Nature* 354: 245-248.
7. Kirschbaum, B.J., et al. 1992. Definition of the transcriptional activation domain of recombinant 43-kilodalton USF. *Mol. Cell. Biol.* 12: 5094-5101.
8. Siritto, M., et al. 1994. Ubiquitous expression of the 43- and 44-kDa forms of transcription factor USF in mammalian cells. *Nucleic Acids Res.* 22: 427-433.

## CHROMOSOMAL LOCATION

Genetic locus: USF1 (human) mapping to 1q23.3; Usf1 (mouse) mapping to 1 H3.

## SOURCE

USF-1 (J-39) is a mouse monoclonal antibody raised against recombinant USF-1 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

USF-1 (J-39) is recommended for detection of USF-1 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for USF-1 siRNA (h): sc-36783, USF-1 siRNA (m): sc-36784, USF-1 shRNA Plasmid (h): sc-36783-SH, USF-1 shRNA Plasmid (m): sc-36784-SH, USF-1 shRNA (h) Lentiviral Particles: sc-36783-V and USF-1 shRNA (m) Lentiviral Particles: sc-36784-V.

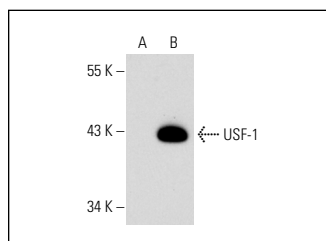
Molecular Weight of USF-1: 43 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, USF-1 (m): 293T Lysate: sc-124487 or HeLa whole cell lysate: sc-2200.

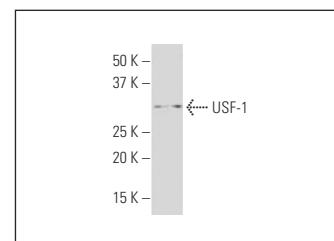
## RECOMMENDED SUPPORT REAGENTS

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).

## DATA



USF-1 (J-39): sc-101197. Western blot analysis of USF-1 expression in non-transfected: sc-117752 (A) and mouse USF-1 transfected: sc-124487 (B) 293T whole cell lysates.



USF-1 (J-39): sc-101197. Western blot analysis of USF-1 expression in K-562 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Scelfo, A., et al. 2019. Functional landscape of PCGF proteins reveals both RING1A/B-dependent and RING1A/B-independent-specific activities. *Mol. Cell* 74: 1037-1052.e7.
2. Li, P., et al. 2020. Inhibition of long noncoding RNA HIF1A-AS2 confers protection against atherosclerosis via ATF2 downregulation. *J. Adv. Res.* 26: 123-135.

## 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.