Anti-Human USF2, monoclonal (clone R1156.1.1A7)

Recommended name: Upstream stimulatory factor 2
Alternative name(s): Class B basic helix-loop-helix protein 12; FOS-interacting protein; Short names: bHLHb12; FIP

Cat. No.	**m15-084**	**Quantity:**	**100 µg**
Lot. No.	**20150803.LI**	**Storage:**	**-20˚C**

FOR RESEARCH USE ONLY

NOT FOR USE IN HUMANS

Uniprot / NCBI Summary

UniProt
Primary Accession # Q15853
Secondary Accession # O00671; O00709

NCBI
GI # 29612623
GeneID 7392
Accession # n/a
GenBank Nucleotide # n/a
Molecular Weight 36,955Da (346 aa)

Transcription factor that binds to a symmetrical DNA sequence (E-boxes) (5'-CACGTG-3') that is found in a variety of viral and cellular promoters. Subunit structure: Interacts with MAF. Efficient DNA binding requires dimerization with another bHLH protein. Binds DNA as a homodimer or a heterodimer (USF1/USF2). *In vivo*, the USF1/USF2A heterodimer represents over 66% of the usf binding activity whereas the USF1 and USF2A homodimers represent less than 10%. The USF1/USF2B heterodimer accounted for almost 15% in some cell.

Cellular Component: nucleus

Continued on page 2.

Physical Characteristics

Quantity: 100 µg

Concentration: 1.0 mg/ml

Host / Isotype: mouse IgG2a

Clonality: monoclonal; ID R1156.1.1A7

Immunogen: recombinant protein corresponding to aa residues 220-346 of human USF2

Purification: affinity-chromatography using Protein G

Formulation: 30% glycerol, 1x PBS, 0.02% sodium azide

Specificity: monospecific for human USF2; see microarray analysis below

Reactivity: human

Stability/Storage: 12 months long term: -20˚C; short term: 4˚C; avoid freeze-thaw cycles; aliquot as required

Handling Notes: small volumes of antibody may occasionally become entrapped in the seal of the product vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container cap.

Tested Research Applications

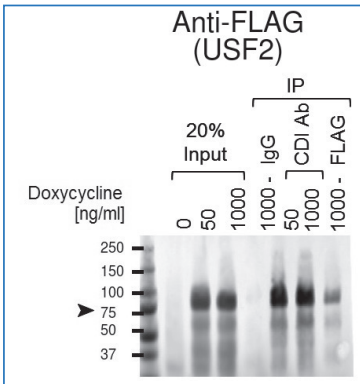
Immunoprecipitation: recommended; see below.

Western Blot: tested on cells transfected with a construct encoding USF2; utility on native cells under evaluation

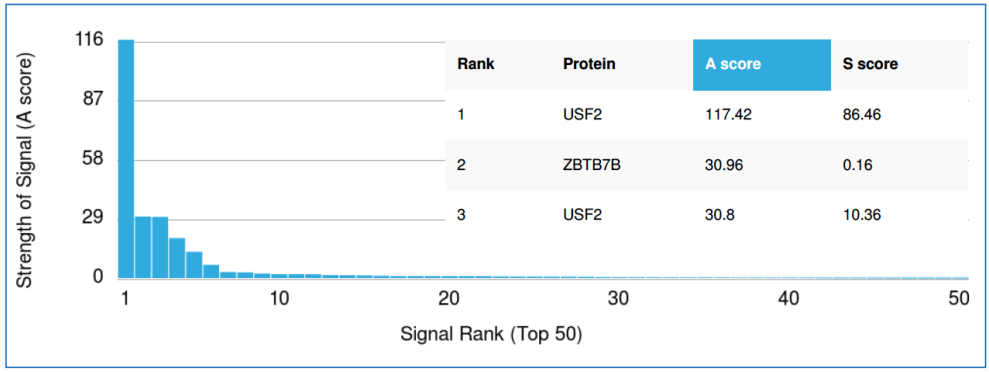
ChIP-Seq: recommended; see page 2

Octet:
Recommended.

Quality Assurance



Tet-ON HeLa cells were transfected with construct encoding USF2 (NM_003367.2) with an N-terminal fusion of FLAG, YFP (Venus) and V5 tags under a tet-inducible promoter. These cells were stimulated with 0, 50 or 1000 ng/ml doxycycline. Immunoprecipitation (IP) was carried out using 5ug of either IgG, CDI mAb Anti-USF2 (cloneID# R1156.1.1A7) or 1 ug of FLAG-M2. Immunoblotting was performed using rabbit Anti-FLAG (1:1000, Cell Signaling #2368).



Rank	Protein	A score	S score
1	USF2	117.42	86.46
2	ZBTB7B	30.96	0.16
3	USF2	30.8	10.36

Specificity Analysis with HuProt™ Human Proteome Microarray: Anti Human USF2 (clone R1156.1.1A7) was analyzed using the CDI HuProt™ Human Proteome Microarray.

For more information on A/S scores and how they relate to specificity, see page 2.

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Lot-specific Datasheet version tracker: v1.0.0

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Uniprot / NCBI Summary

Continued from page 1.

Selected References:

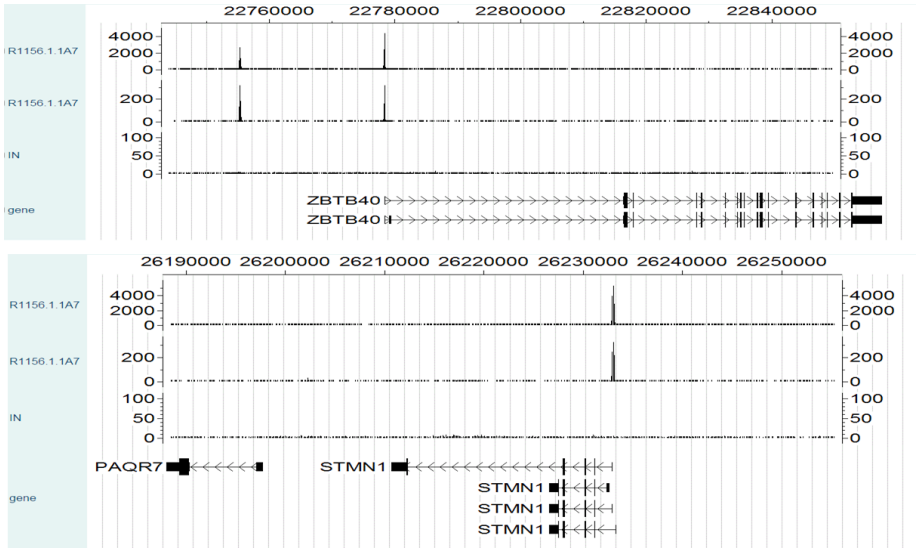
Corre S, Galibert MD (2006) USF as a key regulatory element of gene expression. *Med Sci (Paris)* **22**:62-67. [PubMed]

Samarakoon R, Overstreet JM, Higgins SP, Higgins PJ (2012) TGF-β1 → SMAD/p53/USF2 → PAI-1 transcriptional axis in ureteral obstruction-induced renal fibrosis. *Cell Tissue Res* **347**:117-128. [PubMed]

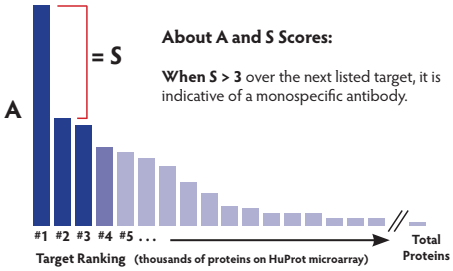
Wang S (2015) Role of upstream stimulatory factor 2 in diabetic nephropathy. *Front Biol (Beijing)* **10**:221-229. [PubMed]

Tested Research Applications

ChIP-Seq: Recommended



The ChIP was performed with chromatin from 10 million HCT116 cells or Hela cells and 3 µg of Anti-USF2 (cloneID # R1156.1.1A7) antibody. The ChIP DNA was sequenced on an Illumina HiSeq platform and read counts were calculated at consecutive 100 bp bins across the human genome hg19. Normalized read-count levels for ChIP-seq of USF2 (R1156.1.1A7) and control (IN) around the STMN1 and ZBTB40 loci are displayed in the CisGenome browser.



About A and S Scores:

When S > 3 over the next listed target, it is indicative of a monospecific antibody.

Statistical Analysis: Thousands of GenePix data points (from the microarray) are analyzed in terms of signal strength and ranked accordingly.

SUMMARY: The A-score indicates the number of standard deviations above background seen for the mean signal bound by the target antigen The S-score represents the difference between the A-score of the target antigen and the next best hit on the array. S-scores **greater than 3 standard deviations over the next listed target** are deemed statistically significant and indicate **highly specific antibodies.** More info at cdi-lab.com/HighSpec.html

The development of this antibody was supported by the National Institutes of Health Protein Capture Reagent Program under award U54HG06434 to CDI Laboratories and Johns Hopkins University.

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