

## NF-1 (1-300): sc-4431 WB

### BACKGROUND

NF-1, also designated CTF, consists of a family of CCAAT box binding proteins that stimulate DNA replication and activate transcription. Analysis of human NF-1 messenger RNA has revealed two forms of the NF-1 protein arising from an alternate splicing of a single NF-1 gene. NF-1 binds its consensus DNA element as a homodimer via an amino terminal DNA binding domain, and activates transcription through a putatively novel, proline-rich, carboxy terminal transactivation domain. The NF-1 protein has been shown to recognize and bind the adenovirus type 2 promoter and activate transcription of herpes simplex virus thymidine kinase genes. The NF-1 consensus element has been found in the upstream promoter region of myriad eukaryotic genes, including that of Ha-Ras,  $\alpha$ -globin, HSP 70, GRP 78, Histone H1, Myelin basic protein and in the *Xenopus laevis* vitellogenin gene promoter.

### REFERENCES

1. Jones, K.A., Kadonaga, J.T., Rosenfeld, P.J., Kelly, T.J. and Tjian, R. 1987. A cellular DNA-binding protein that activates eukaryotic transcription and DNA replication. *Cell* 48: 79-89.
2. Morgan, W.D., Williams, G.T., Morimoto, R.I., Greene, J., Kingston, R.E. and Tjian, R. 1987. Two transcriptional activators, CCAAT-box-binding transcription factor and heat shock transcription factor, interact with a human HSP 70 gene promoter. *Mol. Cell. Biol.* 7: 1129-1138.
3. Santoro, C., Mermod, N., Andrews, P.C. and Tjian, R. 1988. A family of CCAAT-box-binding proteins active in transcription and DNA replication: cloning and expression of multiple cDNAs. *Nature* 334: 218-224.
4. Mermod, N., O'Neill, E.A., Kelly, T.J. and Tjian, R. 1989. The proline-rich transcriptional activator of CTF/NF-I is distinct from the replication and DNA binding domain. *Cell* 58: 741-753.
5. Inoue, T., Tamura, T., Furuichi, T. and Mikoshiba, K. 1990. Isolation of complementary DNAs encoding a cerebellum-enriched nuclear factor I family that activates transcription from the mouse Myelin basic protein promoter. *J. Biol. Chem.* 265: 19065-19070.
6. Wooden, S.K., Li, L.J., Navarro, D., Qadri, I., Pereira, L. and Lee, A.S. 1991. Transactivation of the GRP 78 promoter by malformed proteins, glycosylation block, and calcium ionophore is mediated through a proximal region containing a CCAAT motif which interacts with CTF/NF-I. *Mol. Cell. Biol.* 11: 5612-5623.
7. Dusserre, Y. and Mermod, N. 1992. Purified cofactors and Histone H1 mediate transcriptional regulation by CTF/NF-I. *Mol. Cell. Biol.* 12: 5228-5237.
8. Cardinaux, J.R., Chapel, S. and Wahli, W. 1994. Complex organization of CTF/NF-I, C/EBP, and HNF3 binding sites within the promoter of the liver-specific vitellogenin gene. *J. Biol. Chem.* 269: 32947-32956.

### SOURCE

NF-1 (1-300) is expressed in *E. coli* as a 60 kDa tagged fusion protein corresponding to amino acids 1-300 of NF-1 of human origin.

### PRODUCT

NF-1 (1-300) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10  $\mu$ g in 0.1 ml SDS-PAGE loading buffer.

### APPLICATIONS

NF-1 (1-300) is suitable as a Western blotting control for sc-870 and sc-5567.

### SELECT PRODUCT CITATIONS

1. Jean, D., Rousselet, N. and Frade, R. 2006. Expression of cathepsin L in human tumor cells is under the control of distinct regulatory mechanisms. *Oncogene* 25: 1474-1484.

### STORAGE

Store at -20° C; stable for one year from the date of shipment.

### RESEARCH USE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.