

# BTF3a (A-15): sc-10057

## BACKGROUND

The initiation of gene transcription involves the ordered assembly of a multi-protein complex on proximal promoter elements such as the TATA box. In addition to RNA polymerase II, the transcription factors class II (TFII) family of proteins are required for initiation of transcription. The first step in the formation of this initiation complex is the stable binding of TFIID to the TATA box. An additional TFII related protein, BTF3, does not directly associate with the proximal promoter, but rather forms a stable complex with RNA pol II and facilitates RNA pol II assembling into the complex. The BTF3 gene is ubiquitously expressed and encodes for two protein isoforms, BTF3a and BTF3b, which are produced from alternative splicing. The BTF3 proteins are identical except that BTF3b lacks the first 44 amino acids at the N-terminal of BTF3a. As a consequence of this deletion, BTF3b is unable to induce transcription, despite being able to bind RNA pol II. Additionally, BTF3a and BTF3b associate with the widely expressed protein kinase CK2. CK2 phosphorylates BTF3a, as well as TFIIB, and is required for the efficient transcription of the tRNA and 5S rRNA genes by RNA pol III.

## REFERENCES

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3. Kanno, M., et al. 1992. Genomic structure of the putative BTF3 transcription factor. *Gene*. 117: 219-228.
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8. Ghavidel, A., et al. 1999. A review of progress towards elucidating the role of protein kinase CK2 in polymerase III transcription: regulation of the TATA binding protein. *Mol. Cell. Biochem.* 191: 143-148.

## CHROMOSOMAL LOCATION

Genetic locus: BTF3 (human) mapping to 5q14.1; Btf3 (mouse) mapping to 13 D1.

## SOURCE

BTF3a (A-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of BTF3a 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-10057 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

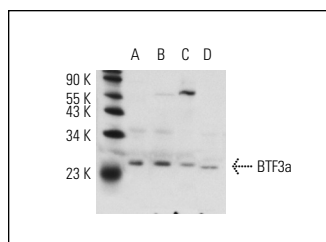
BTF3a (A-15) is recommended for detection of BTF3a of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 BTF3a/b siRNA (h): sc-38513, BTF3a/b siRNA (m): sc-38514, BTF3a/b shRNA Plasmid (h): sc-38513-SH, BTF3a/b shRNA Plasmid (m): sc-38514-SH, BTF3a/b shRNA (h) Lentiviral Particles: sc-38513-V and BTF3a/b shRNA (m) Lentiviral Particles: sc-38514-V.

Molecular Weight of BTF3a: 27 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, MCF7 nuclear extract: sc-2149 or HL-60 nuclear extract: sc-2147.

## DATA



BTF3a (A-15): sc-10057. Western blot analysis of BTF3a expression in HeLa (A), MCF7 (B) and HL-60 (C) nuclear extracts and MDA-MB-468 (D) whole cell lysate.

## 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.