

BTF3a/b (A-5): sc-166093

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, as 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

1. Zheng, X.M., et al. 1987. A general transcription factor forms a stable complex with RNA polymerase B (II). *Cell* 50: 361-368.
2. Zheng, X.M., et al. 1990. Sequencing and expression of complementary DNA for the general transcription factor BTF3. *Nature* 344: 556-559.
3. Kanno, M., et al. 1992. Genomic structure of the putative BTF3 transcription factor. *Gene* 117: 219-228.

CHROMOSOMAL LOCATION

Genetic locus: BTF3 (human) mapping to 5q13.2; Btf3 (mouse) mapping to 13 D1.

SOURCE

BTF3a/b (A-5) is a mouse monoclonal antibody raised against amino acids 1-206 representing full length BTF3a of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BTF3a/b (A-5) is available conjugated to agarose (sc-166093 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166093 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166093 PE), fluorescein (sc-166093 FITC), Alexa Fluor® 488 (sc-166093 AF488), Alexa Fluor® 546 (sc-166093 AF546), Alexa Fluor® 594 (sc-166093 AF594) or Alexa Fluor® 647 (sc-166093 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166093 AF680) or Alexa Fluor® 790 (sc-166093 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

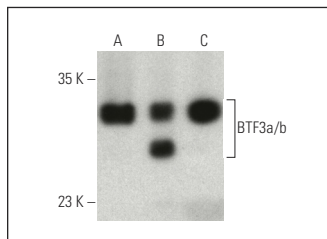
BTF3a/b (A-5) is recommended for detection of BTF3a/b of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

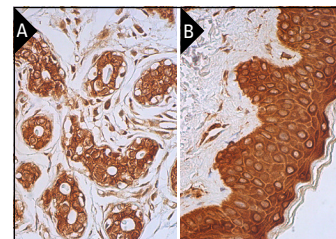
Molecular Weight of BTF3a: 27 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa nuclear extract: sc-2120 or HL-60 nuclear extract: sc-2147.

DATA



BTF3a/b (A-5) HRP: sc-166093 HRP. Direct western blot analysis of BTF3a/b expression in HeLa (A) and HL-60 (B) nuclear extracts and HeLa whole cell lysate (C).



BTF3a/b (A-5): sc-166093. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic and nuclear staining of keratinocytes, fibroblasts, Langerhans cells and melanocytes (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic and nuclear staining of glandular cells and myoepithelial cells (B).

SELECT PRODUCT CITATIONS

1. Tan, Y., et al. 2024. ARID5B-mediated LINC01128 epigenetically activated pyroptosis and apoptosis by promoting the formation of the BTF3/STAT3 complex in β2GPI/anti-β2GPI-treated monocytes. *Clin. Transl. Med.* 14: e1539.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.