SANTA CRUZ BIOTECHNOLOGY, INC.

TFIIB (IIB1): sc-56793

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In eukaryotic systems, initiation of transcription from protein-coding genes is a complex process requiring RNA polymerase II and broad families of auxiliary transcription factors. Such factors can be divided into two major functional classes: the basal factors that are required for transcription of all Pol II genes, including TFIIA, TFIIB, TFIID, TFIIE, TFIIF and TFIIH; and sequence-specific factors that regulate gene expression. The basal transcription factors and Pol II form a specific multiprotein complex near the transcription start site by interacting with core promotor elements such as the TATA box generally located 25-30 base pairs upstream of the transcription start site. Template commitment is established by the initial binding of TFIID to the "TATA" element of the promotor, a step which may be facilitated by TFIIA. TFIIB then acts as the bridge between TFIID and RNA polymerase II.

REFERENCES

1. Maldonado, E., et al. 1990. Factors involved in specific transcription by mammalian RNA polymerase II: role of transcription factors IIA, IID, and IIB during formation of a transcription-competent complex. Mol. Cell. Biol. 10: 6335-6347.
2. Peterson, M.G., et al. 1990. Functional domains and upstream activation properties of cloned human TATA binding protein. Science 248: 1625-1630.
3. Peterson, M.G., et al. 1991. Structure and functional properties of human general transcription factor IIE. Nature 354: 369-373.
4. Malik, S., et al. 1991. Sequence of general transcription factor TFIIB and relationships to other initiation factors. Proc. Natl. Acad. Sci. USA 88: 9553-9557.
5. Lee, D.K., et al. 1992. TFIIA induces conformational changes in TFIID via interactions with the basic repeat. Mol. Cell. Biol. 12: 5189-5196.
6. Takada, R., et al. 1992. Identification of human TFIID components and direct interaction between a 250 kDa polypeptide and the TATA box-binding protein (TFIIDt). Proc. Natl. Acad. Sci. USA 89: 11809-11813.
7. Yonaha, M., et al. 1993. Domain structure of a human general transcription initiation factor, TFIIF. Nucleic Acids Res. 21: 273-279.

CHROMOSOMAL LOCATION

Genetic locus: GTF2B (human) mapping to 1p22.2; Gtf2b (mouse) mapping to 3 H1.

SOURCE

TFIIB (IIB1) is a mouse monoclonal antibody raised against TFIIB of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

TFIIB (IIB1) is recommended for detection of TFIIB of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for TFIIB siRNA (h): sc-29502, TFIIB siRNA (m): sc-36647, TFIIB shRNA Plasmid (h): sc-29502-SH, TFIIB shRNA Plasmid (m): sc-36647-SH, TFIIB shRNA (h) Lentiviral Particles: sc-29502-V and TFIIB shRNA (m) Lentiviral Particles: sc-36647-V.

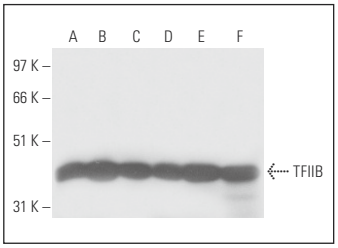
Molecular Weight of TFIIB: 38 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa nuclear extract: sc-2120 or Jurkat whole cell lysate: sc-2204.

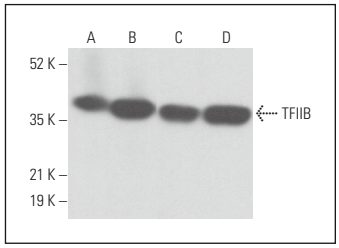
RECOMMENDED SUPPORT REAGENTS

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



TFIIB (IIB1): sc-56793. Western blot analysis of TFIIB expression in K-562 (**A**), Jurkat (**B**), Hep G2 (**C**), U-937 (**D**) and HeLa (**E**) nuclear extracts and Jurkat whole cell lysate (**F**).



TFIIB (IIB1): sc-56793. Western blot analysis of TFIIB expression in A-431 nuclear extract (**A**) and RAW 264.7 (**B**), C6 (**C**) and PC-12 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Santana, J.F., et al. 2022. Differential dependencies of human RNA polymerase II promoters on TBP, TAF1, TFIIB and XPB. Nucleic Acids Res. 50: 9127-9148.

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.