SANTA CRUZ BIOTECHNOLOGY, INC.

TFIIH p89 (G-10): sc-271500

BACKGROUND

Initiation of transcription from protein-coding genes in eukaryotes is a complex process that requires RNA polymerase II, as well as families of basal transcription factors. Binding of the factor TFIID (TBP) to the TATA box is believed to be the first step in the formation of a multiprotein complex containing several additional factors, including TFIIA, TFIIB, TFIIE, TFIIF and TFIIH. TFIIH (or BTF2) is a multisubunit transcription/DNA repair factor that possesses several enzymatic activities. The core of TFIIH is composed of five subunits, designated p89 (XPB or ERCC3), p62, p52, p44 and p34. Additional subunits of the TFIIH complex are p80 (XPD or ERCC2) and the ternary kinase complex composed of Cdk7, cyclin H and MAT1. Both p89 and p80 have ATP-dependent helicase activity. The p62, p52 and p44 subunits have been shown to be involved in nucleotide excision repair.

REFERENCES

1. Conaway, R.C., et al. 1989. An RNA polymerase II transcription factor has an associated DNA-dependent ATPase (dATPase) activity strongly stimulated by the TATA region of promoters. Proc. Natl. Acad. Sci. USA 86: 7356-7360.
2. Weeda, G., et al. 1990. A presumed DNA helicase encoded by ERCC-3 is involved in the human repair disorders xeroderma pigmentosum and Cockayne's syndrome. Cell 62: 777-791.

CHROMOSOMAL LOCATION

Genetic locus: ERCC3 (human) mapping to 2q14.3; Ercc3 (mouse) mapping to 18 B1.

SOURCE

TFIIH p89 (G-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 738-788 at the C-terminus of TFIIH p89 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-271500 X, 200 µg/0.1 ml.

TFIIH p89 (G-10) is available conjugated to agarose (sc-271500 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271500 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271500 PE), fluorescein (sc-271500 FITC), Alexa Fluor® 488 (sc-271500 AF488), Alexa Fluor® 546 (sc-271500 AF546), Alexa Fluor® 594 (sc-271500 AF594) or Alexa Fluor® 647 (sc-271500 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271500 AF680) or Alexa Fluor® 790 (sc-271500 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271500 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

TFIIH p89 (G-10) is recommended for detection of TFIIH p89 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

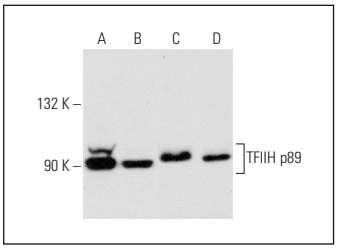
Suitable for use as control antibody for TFIIH p89 siRNA (h): sc-36655, TFIIH p89 siRNA (m): sc-36656, TFIIH p89 shRNA Plasmid (h): sc-36655-SH, TFIIH p89 shRNA Plasmid (m): sc-36656-SH, TFIIH p89 shRNA (h) Lentiviral Particles: sc-36655-V and TFIIH p89 shRNA (m) Lentiviral Particles: sc-36656-V.

TFIIH p89 (G-10) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

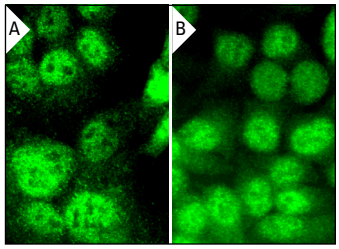
Molecular Weight of TFIIH p89: 89 kDa.

Positive Controls: A-431 nuclear extract: sc-2122, C32 nuclear extract: sc-2136 or MM-142 nuclear extract: sc-2139.

DATA



TFIIH p89 (G-10): sc-271500. Western blot analysis of TFIIH p89 expression in A-431 (**A**), C32 (**B**), MM-142 (**C**) and 3611-RF (**D**) nuclear extracts.



TFIIH p89 (G-10): sc-271500. Immunofluorescence staining of formalin-fixed Hep G2 (**A**) and HeLa (**B**) cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Yang, Y., et al. 2018. Cisplatin-DNA adduct repair of transcribed genes is controlled by two circadian programs in mouse tissues. Proc. Natl. Acad. Sci. USA 115: E4777-E4785.
2. Tan-Wong, S.M., et al. 2019. R-loops promote antisense transcription across the mammalian genome. Mol. Cell 76: 600-616.e6.
3. Nakazawa, Y., et al. 2020. Ubiquitination of DNA damage-stalled RNAPII promotes transcription-coupled repair. Cell 180: 1228-1244.e24.
4. Sales, A.H., et al. 2022. Treatment of human HeLa cells with black raspberry extracts enhances the removal of DNA lesions by the nucleotide excision repair mechanism. Antioxidants 11: 2110.
5. Kang, D., et al. 2022. Triptolide shows high sensitivity and low toxicity against acute myeloid leukemia cell lines through inhibiting WSTF-RNAPII complex. Front. Oncol. 12: 811850.

STORAGE

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