SANTA CRUZ BIOTECHNOLOGY, INC.

T-bet (4B10): sc-21749

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

T helper (Th) lymphocytes differentiate into two unique subsets, Th1 and Th2, which differ both in function and in the cytokines they secrete. Th1 and Th2 cytokines promote the growth and differentiation of their subset, and inhibit the growth and differentiation of the opposing subset. T-bet (T-box expressed in T cells) is a Th1-specific T-box transcription factor that controls the expression of the Th1 cytokine, IFN-γ. T-bet also converts effector Th2 cells into the opposing Th1 subset. T-bet is selectively expressed in Th1 cells. The level of T-bet expression is increased by signals mediated by the T cell receptor (TCR). IL-12 also induces an increase in the level of T-bet. T-bet was originally isolated from nuclear extracts of resting and PMA/ionomycin-activated AE7 cells. It is expressed in low levels in AE7 cells, and in increased levels in stimulated AE7.

REFERENCES

1. Mosmann, T.R. and Coffman, R.L. 1989. TH1 and TH2 cells: different patterns of lymphokine secretion lead to different functional properties. Annu. Rev. Immunol. 7: 145-173.
2. Paul, W.E. and Seder, R.A. 1994. Lymphocyte responses and cytokines. Cell 76: 241-251.

CHROMOSOMAL LOCATION

Genetic locus: TBX21 (human) mapping to 17q21.32; Tbx21 (mouse) mapping to 11 D.

SOURCE

T-bet (4B10) is a mouse monoclonal antibody raised against full-length recombinant T-bet of mouse 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-21749 X, 200 µg/0.1 ml.

T-bet (4B10) is available conjugated to agarose (sc-21749 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-21749 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-21749 PE), fluorescein (sc-21749 FITC), Alexa Fluor® 488 (sc-21749 AF488), Alexa Fluor® 546 (sc-21749 AF546), Alexa Fluor® 594 (sc-21749 AF594) or Alexa Fluor® 647 (sc-21749 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-21749 AF680) or Alexa Fluor® 790 (sc-21749 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, T-bet (4B10) is available conjugated to Alexa Fluor® 405 (sc-21749 AF405, 200 µg/ml), 100 tests in 2 ml, for IF, IHC(P) and FCM.

STORAGE

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

APPLICATIONS

T-bet (4B10) is recommended for detection of T-bet 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

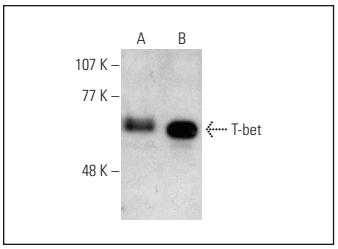
Suitable for use as control antibody for T-bet siRNA (h): sc-36598, T-bet siRNA (m): sc-36599, T-bet siRNA (r): sc-270589, T-bet shRNA Plasmid (h): sc-36598-SH, T-bet shRNA Plasmid (m): sc-36599-SH, T-bet shRNA Plasmid (r): sc-270589-SH, T-bet shRNA (h) Lentiviral Particles: sc-36598-V, T-bet shRNA (m) Lentiviral Particles: sc-36599-V and T-bet shRNA (r) Lentiviral Particles: sc-270589-V.

T-bet (4B10) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

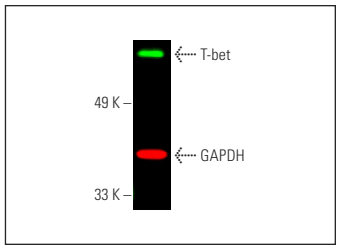
Molecular Weight of T-bet: 62 kDa.

Positive Controls: BJAB nuclear extract: sc-2145, Jurkat nuclear extract: sc-2132 or BJAB whole cell lysate: sc-2207.

DATA



T-bet (4B10) HRP: sc-21749 HRP. Western blot analysis of T-bet expression in BJAB whole cell lysate (**A**) and nuclear extract (**B**).



Simultaneous direct near-infrared western blot analysis of T-bet expression, detected with T-bet (4B10) Alexa Fluor® 680: sc-21749 AF680 and GAPDH expression, detected with GAPDH (G-9) Alexa Fluor® 790: sc-365062 AF790 in BJAB nuclear extract. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Patel, D.R., et al. 2004. Altered Th1 cell differentiation programming by CIITA deficiency. J. Immunol. 173: 5501-5508.
2. Sakaguchi, A., et al. 2021. Plasma cell infiltration and treatment effect in breast cancer patients treated with neoadjuvant chemotherapy. Breast Cancer Res. 23: 99.
3. Onagi, H., et al. 2022. High platelet-to-lymphocyte ratios in triple-negative breast cancer associates with immunosuppressive status of TILs. Breast Cancer Res. 24: 67.
4. Erlandsson, A., et al. 2023. Infiltrating immune cells in prostate cancer tissue after androgen deprivation and radiotherapy. Int. J. Immunopathol. Pharmacol. 37: 3946320231158025.

RESEARCH USE

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