SANTA CRUZ BIOTECHNOLOGY, INC.

CIITA (7-1H): sc-13556

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mounting of an immune response and CD4 T cell development in vertebrates require the expression of major histocompatibility complex (MHC) class II molecules. MHC class II molecules are heterodimeric cell surface glycoproteins expressed on B cells, macrophages and dendritic cells, which present antigens to CD4+ T cells. CIITA (class II transactivator) acts as a coactivator for MHC class II-specific gene expression and negatively regulates the IL-4 gene promoter during T cell differentiation. IFN-γ induces CIITA gene expression via JAK1 and Stat1 pathways. The GTP-binding and acidic, proline-serine-threonine-rich regions appear to be required for CIITA activity. RFX-B (also designated RFXANK and Tvl-1) is the smallest subunit of the RFX complex, which is also required for MHC class II-specific gene transcription. RFX-B contains three ankyrin-repeats that may allow protein-protein interactions between RFX-B and other RFX subunits, and possibly with CIITA and NF-Y. Defects of CIITA and RFX-B have been implicated as causes of bare lymphocyte syndrome (BLS), which is characterized by the absence of MHC class II transcription and severe immunodeficiencies.

REFERENCES

1. Steimle, V., et al. 1993. Complementation cloning of an MHC class II transactivator mutated in hereditary MHC class II deficiency (or bare lymphocyte syndrome). Cell 75: 135-146.

2. Chin, K.C., et al. 1994. Molecular analysis of G1B and G3A IFN γ mutants reveals that defects in CIITA or RFX result in defective class II MHC and Ii gene induction. Immunity 1: 687-697.

CHROMOSOMAL LOCATION

Genetic locus: CIITA (human) mapping to 16p13.13; Ciita (mouse) mapping to 16 A1.

SOURCE

CIITA (7-1H) is a mouse monoclonal antibody raised against amino acids 1-350 of purified recombinant CIITA 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13556 X, 200 µg/0.1 ml.

CIITA (7-1H) is available conjugated to agarose (sc-13556 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13556 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13556 PE), fluorescein (sc-13556 FITC), Alexa Fluor® 488 (sc-13556 AF488), Alexa Fluor® 546 (sc-13556 AF546), Alexa Fluor® 594 (sc-13556 AF594) or Alexa Fluor® 647 (sc-13556 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13556 AF680) or Alexa Fluor® 790 (sc-13556 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

CIITA (7-1H) is recommended for detection of CIITA 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for CIITA siRNA (h): sc-37739, CIITA siRNA (m): sc-37740, CIITA shRNA Plasmid (h): sc-37739-SH, CIITA shRNA Plasmid (m): sc-37740-SH, CIITA shRNA (h) Lentiviral Particles: sc-37739-V and CIITA shRNA (m) Lentiviral Particles: sc-37740-V.

CIITA (7-1H) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.
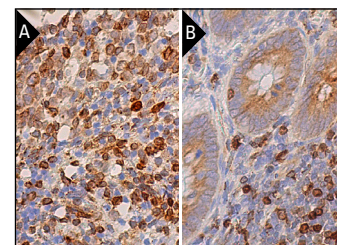
Molecular Weight of CIITA: 130 kDa.

Positive Controls: CIITA (m2): 293T Lysate: sc-178403 or Jurkat whole cell lysate: sc-2204.

DATA
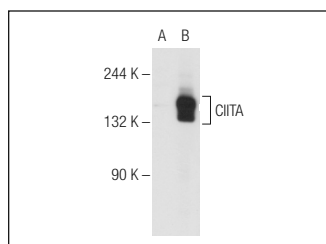
CIITA (7-1H): sc-13556. Western blot analysis of CIITA expression in non-transfected: sc-117752 (**A**) and mouse CIITA transfected: sc-178403 (**B**) 293T whole cell lysates.

CIITA (7-1H): sc-13556. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic and membrane staining of cells in non-germinal center (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing nuclear, cytoplasmic and membrane staining of lymphoid cells (**B**).

SELECT PRODUCT CITATIONS

1. Croce, M., et al. 2003. Different levels of control prevent interferon-γ-inducible HLA-class II expression in human neuroblastoma cells. Oncogene 22: 7848-7857.

2. Forlani, G., et al. 2016. The major histocompatibility complex class II transactivator CIITA inhibits the persistent activation of NFκB by the human T cell lymphotropic virus vtype 1 Tax-1 oncoprotein. J. Virol. 90: 3708-3721.

3. Forlani, G., et al. 2017. Tripartite motif-containing protein 22 interacts with class II transactivator and orchestrates its recruitment in nuclear bodies containing TRIM19/PML and cyclin T1. Front. Immunol. 8: 564.

4. Forsberg, J., et al. 2018. A caspase-2-RFXANK interaction and its implication for MHC class II expression. Cell Death Dis. 9: 80.

STORAGE

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