SANTA CRUZ BIOTECHNOLOGY, INC.

CIITA (N-20): sc-9867

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 TvI-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.
3. Boss, J.M. 1997. Regulation of transcription of MHC class II genes. Curr. Opin. Immunol. 9: 107-113.
4. Moreno, C.S., et al. 1997. Regulatory factor X, a bare lymphocyte syndrome transcription factor, is a multimeric phosphoprotein complex. J. Immunol. 158: 5841-5848.

CHROMOSOMAL LOCATION

Genetic locus: CIITA (human) mapping to 16p13.13.

SOURCE

CIITA (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CIITA of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-9867 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-9867 X, 200 µg/0.1 ml.

STORAGE

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

APPLICATIONS

CIITA (N-20) is recommended for detection of CIITA of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 CIITA siRNA (h): sc-37739, CIITA shRNA Plasmid (h): sc-37739-SH and CIITA shRNA (h) Lentiviral Particles: sc-37739-V.

CIITA (N-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of CIITA: 130 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Sengupta, P.K., et al. 2002. The RFX family interacts at the collagen (COL1A2) start site and represses transcription. J. Biol. Chem. 277: 24926-24937.
2. Xu, Y., et al. 2004. Major histocompatibility class II transactivator (CIITA) mediates repression of collagen (COL1A2) transcription by interferon γ (IFN-γ). J. Biol. Chem. 279: 41319-41332.
3. Zehbe, I., et al. 2005. Differential MHC class II component expression in HPV-positive cervical cancer cells: implication for immune surveillance. Int. J. Cancer 117: 807-815.
4. McKinsey, T.A., et al. 2006. Class II histone deacetylases confer signal responsiveness to the ankyrin-repeat proteins ANKRA2 and RFXANK. Mol. Biol. Cell 17: 438-447.

RESEARCH USE

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