

CIITA (m2): 293T Lysate: sc-178403

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- κ B. 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

- 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.
- 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 li gene induction. *Immunity* 1: 687-697.
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- 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.
- Scholl, T., et al. 1997. Specific complex formation between the type II bare lymphocyte syndrome-associated transactivators CIITA and RFX5. *Proc. Natl. Acad. Sci. USA* 94: 6330-6334.
- Masternak, K., et al. 1998. A gene encoding a novel RFX-associated transactivator is mutated in the majority of MHC class II deficiency patients. *Nat. Genet.* 20: 273-277.
- Morris, A.C., et al. 1998. MHC class II gene silencing in trophoblast cells is caused by inhibition of CIITA expression. *Am. J. Reprod. Immunol.* 40: 385-394.
- Brickey, W.J., et al. 1999. Analysis of the defect in IFN- γ induction of MHC class II genes in G1B cells: identification of a novel and functionally critical leucine-rich motif (62-LYLYQL-68) in the regulatory factor X 5 transcription factor. *J. Immunol.* 163: 6622-6630.

CHROMOSOMAL LOCATION

Genetic locus: Ciita (mouse) mapping to 16 A1.

RESEARCH USE

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

PRODUCT

CIITA (m2): 293T Lysate represents a lysate of mouse CIITA transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

CIITA (m2): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive CIITA antibodies. Recommended use: 10-20 μ l per lane.

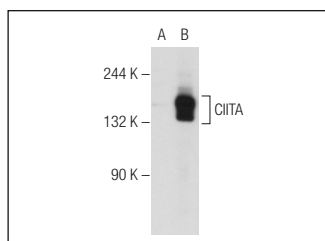
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

CIITA (7-1H): sc-13556 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse CIITA expression in CIITA transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

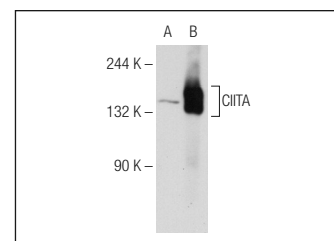
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

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

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.