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CIITA Antibody

Catalog # ASC11204

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P33076
Other Accession	P33076, 218511957
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	123415
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CIITA antibody can be used for detection of CIITA by Western blot at 1 g/mL. Antibody can also be used for immunohistochemistry starting at 10 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	4261
Other Names	MHC class II transactivator, CIITA, 2.3.1.-, 2.7.11.1, CIITA, MHC2TA
Target/Specificity	CIITA;
Reconstitution & Storage	CIITA antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	CIITA Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CIITA (HGNC:7067)
Synonyms	MHC2TA
Function	Essential for transcriptional activity of the HLA class II promoter; activation is via the proximal promoter (PubMed:16600381, PubMed:17493635, PubMed:7749984, PubMed:8402893). Does not bind DNA (PubMed:16600381, PubMed:17493635, PubMed:7749984, PubMed:8402893). May act in a coactivator-like fashion through protein-protein interactions by contacting factors binding to the proximal MHC class II promoter, to elements of the transcription machinery, or both PubMed:8402893, PubMed:7749984, (PubMed:16600381, PubMed:17493635). Alternatively it may activate HLA

class II transcription by modifying proteins that bind to the MHC class II promoter (PubMed:16600381, PubMed:17493635, PubMed:7749984, PubMed:8402893). Also mediates enhanced MHC class I transcription; the promoter element requirements for CIITA-mediated transcription are distinct from those of constitutive MHC class I transcription, and CIITA can functionally replace TAF1 at these genes. Activates CD74 transcription (PubMed:32855215). Exhibits intrinsic GTP- stimulated acetyltransferase activity (PubMed:11172716). Exhibits serine/threonine protein kinase activity: can phosphorylate the TFIID component TAF7, the RAP74 subunit of the general transcription factor TFIIF, histone H2B at 'Ser-37' and other histones (in vitro) (PubMed:24036077). Has antiviral activity against Ebola virus and coronaviruses, including SARS-CoV-2 (PubMed:32855215). Induces resistance by up-regulation of the p41 isoform of CD74, which blocks cathepsin-mediated cleavage of viral glycoproteins, thereby preventing viral fusion (PubMed:32855215).

Cellular Location Nucleus. Nucleus, PML body. Note=Recruited to PML body by PML

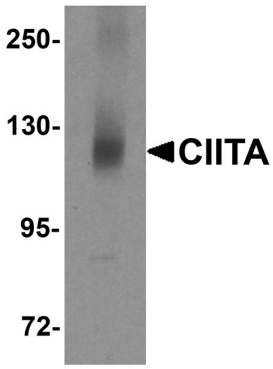
Background

CIITA Antibody: CIITA contains an acidic transcriptional activation domain, four LRRs (leucine-rich repeats) and a GTP binding domain. It is located in the nucleus and acts as a positive regulator of class II major histocompatibility complex gene transcription, and is referred to as the "master control factor" for the expression of these genes. CIITA also binds GTP and uses GTP binding to facilitate its own transport into the nucleus. Once in the nucleus it does not bind DNA but rather uses an intrinsic acetyltransferase (AT) activity to act in a coactivator-like fashion. Mutations in this gene have been associated with bare lymphocyte syndrome type II (also known as hereditary MHC class II deficiency or HLA class II-deficient combined immunodeficiency), increased susceptibility to rheumatoid arthritis, multiple sclerosis, and possibly myocardial infarction.

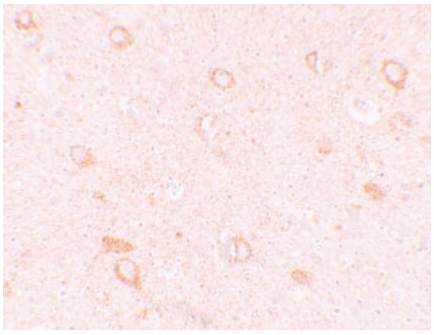
References

LeibundGut-Landmann S, Waldburger JM, Krawczyk M, et al. Mini-review: specificity and expression of CIITA, the master regulator of MHC class II genes. Eur. J. Immunol. 2004; 34:1513-25.
Harton JA, Cressman DE, Chin KC, et al. GTP binding by class II transactivator: role in nuclear import. Science 1999; 285:1402-5.
Raval A, Howcroft TK, Weissman JD, et al. Transcriptional coactivator, CIITA, is an acetyltransferase that bypasses a promoter requirement for TAF(II)250. Mol. Cell 2001; 7:105-15.
Inohara C, McDonald C, and Nunez G. NOD-LRR proteins: role in host-microbial interactions and inflammatory disease. Annu. Rev. Biochem. 2005; 74:355-83.

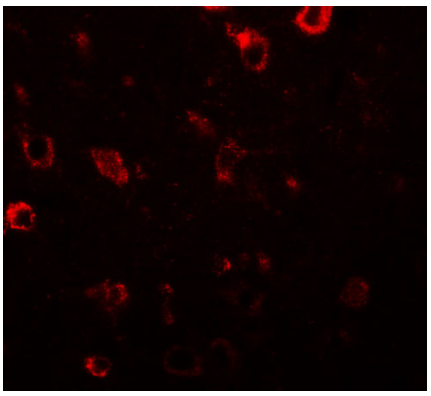
Images



Western blot analysis of CIITA in mouse brain tissue lysate with CIITA antibody at 1 µg/mL.



Immunohistochemistry of CIITA in human brain tissue with CIITA antibody at 10 µg/mL.



Immunofluorescence of CIITA in human brain tissue with CIITA antibody at 20 µg/mL.