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TBX21 Antibody
Catalog # ASC11699

Specification

TBX21 Antibody - Product Information

Application	**WB, IF, E**
Primary Accession	Q9UL17
Other Accession	NP_037483, 7019549
Reactivity	**Human, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 59 kDa** **Observed: 55kDa KDa**
Application Notes	**TBX21 antibody can be used for detection of TBX21 by Western blot at 1 - 2 µg/ml.**

TBX21 Antibody - Additional Information

Gene ID **30009**

Target/Specificity
TBX21; TBX21 antibody is human and mouse reactive.

Reconstitution & Storage
TBX21 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.

Precautions
TBX21 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

TBX21 Antibody - Protein Information

Name TBX21

Synonyms TBET, TBLYM

Function
Lineage-defining transcription factor which initiates Th1 lineage development from naive Th precursor cells both by activating Th1 genetic programs and by repressing the opposing Th2 and Th17 genetic programs (PubMed:10761931). Activates transcription of a set of genes important for Th1 cell function, including those encoding IFN- gamma and the chemokine receptor CXCR3. Induces permissive chromatin accessibilty and CpG methylation in IFNG (PubMed:33296702). Activates IFNG and CXCR3 genes in part by recruiting chromatin remodeling complexes including KDM6B, a SMARCA4-containing SWI/SNF-complex, and an H3K4me2-methyltransferase complex to their promoters and all of these complexes serve to establish a more permissive chromatin state conducive with transcriptional activation (By similarity). Can activate Th1 genes also via

recruitment of Mediator complex and P-TEFb (composed of CDK9 and CCNT1/cyclin-T1) in the form of the super elongation complex (SEC) to super-enhancers and associated genes in activated Th1 cells (PubMed:27292648). Inhibits the Th17 cell lineage commitment by blocking RUNX1-mediated transactivation of Th17 cell-specific transcriptinal regulator RORC. Inhibits the Th2 cell lineage commitment by suppressing the production of Th2 cytokines, such as IL-4, IL-5, and IL- 13, via repression of transcriptional regulators GATA3 and NFATC2. Protects Th1 cells from amplifying aberrant type-I IFN response in an IFN-gamma abundant microenvironment by acting as a repressor of type-I IFN transcription factors and type-I IFN-stimulated genes. Acts as a regulator of antiviral B-cell responses; controls chronic viral infection by promoting the antiviral antibody IgG2a isotype switching and via regulation of a broad antiviral gene expression program (By similarity). Required for the correct development of natural killer (NK) and mucosal-associated invariant T (MAIT) cells (PubMed:33296702).

Cellular Location
Nucleus

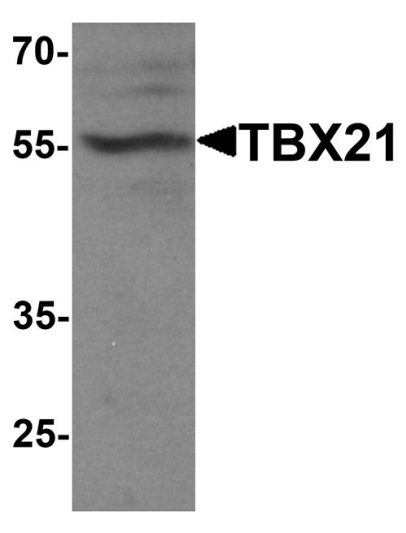
Tissue Location
T-cell specific..

TBX21 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

TBX21 Antibody - Images



Western blot analysis of TBX21 in 293 cell lysate with TBX21 antibody at 1 µg/ml.

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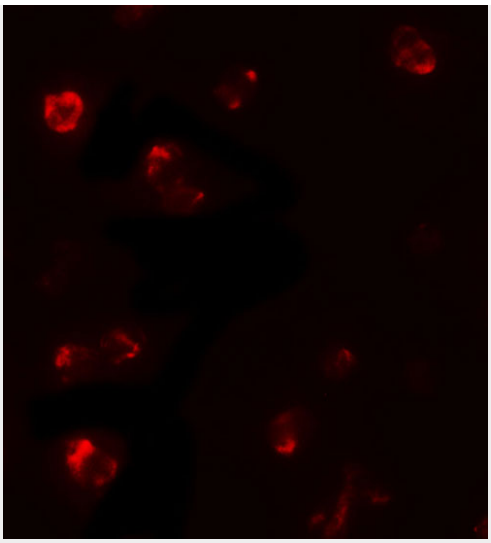

Immunofluorescence of TBX21 in 293 cells with TBX21 antibody at 5 µg/mL.

TBX21 Antibody - Background

TBX21 is a member of a phylogenetically conserved family of genes that share a common DNA-binding domain, the T-box (1,2). Members of this family include transcription factors involved in the regulation of developmental processes (2). Studies in mouse and humans show that TBX21 is a Th1 cell-specific transcription factor that controls the expression of the hallmark Th1 cytokine, interferon-gamma (1,3). Expression of the human ortholog also correlates with interferon-gamma expression in Th1 and natural killer cells, suggesting a TBX21 may play a role in initiating Th1 lineage development from naive Th precursor cells. (3).

TBX21 Antibody - References

Szabo SJ, Kim ST, Costa GL, et al. A novel transcription factor, T-bet, directs Th1 lineage commitment. Cell 2000; 100:655-69.
Naiche LA, Harrelson Z, Kelly RG, et al. T-box genes in vertebrate development. Annu. Rev. Genet. 2005; 39:219-39.
Hibbert L, Pflanz S, De Waal Malefyt R, et al. IL-27 and IFN-alpha signal via Stat1 and Stat3 and induce T-Bet and IL-12Rbeta2 in naive T cells. J. Interfeon Cytokine Res. 2003; 23:513-22.