

**TBX21 Antibody**  
**Catalog # ASC11699****Specification****TBX21 Antibody - Product Information**

|                   |   |
|-------------------|---|
| Application       | WB, IF, E   |
| Primary Accession | <a href="#">Q9UL17</a>                              |
| Other Accession   | <a href="#">NP_037483</a> , <a href="#">7019549</a> |
| Reactivity        | Human, Mouse  |
| Host              | Rabbit  |
| Clonality         | Polyclonal  |
| Isotype           | IgG   |
| Calculated MW     | Predicted: 59 kDa                                   |

|                   |  |
|-------------------|--|
| Application Notes | <b>Observed: 55kDa KDa</b><br><b>TBX21 antibody can be used for detection of TBX21 by Western blot at 1 - 2 µg/ml.</b> |
|-------------------|--|

**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°C for three months and -20°C, 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:<a href="http://www.uniprot.org/citations/10761931" target="\_blank">10761931</a>). 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 accessibility and CpG methylation in IFNG (PubMed:<a href="http://www.uniprot.org/citations/33296702" target="\_blank">33296702</a>). 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](http://www.uniprot.org/citations/27292648)). Inhibits the Th17 cell lineage commitment by blocking RUNX1-mediated transactivation of Th17 cell-specific transcriptional 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](http://www.uniprot.org/citations/33296702)).

**Cellular Location**

Nucleus

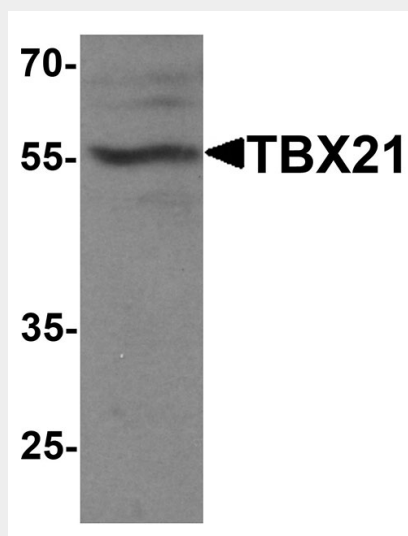
**Tissue Location**

T-cell specific..

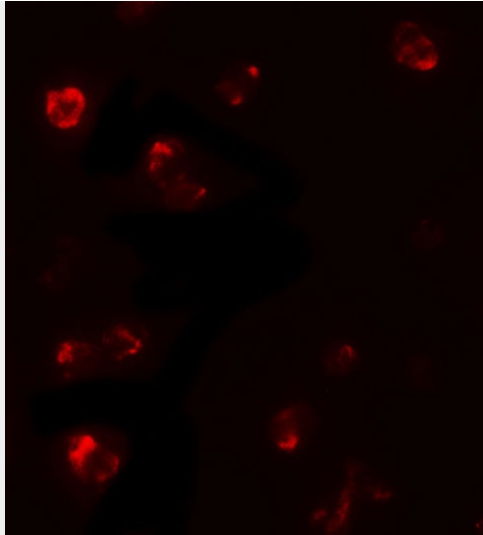
**TBX21 Antibody - Protocols**

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

**TBX21 Antibody - Images**

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



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. Interferon Cytokine Res.* 2003; 23:513-22.