

Recombinant Mouse TBX21 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51931

Size: 10ug, 100ug

Protein Name: T-box transcription factor TBX21 (T-box protein 21) (T-cell-specific T-box transcription factor T-bet) (Transcription factor TBLYM)

Synonym: Tbx21, Tbet, Tblym

UniProt ID: Q9JKD8

UniProt Link: www.uniprot.org/uniprotkb/Q9JKD8/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 530 AA

Molecular Weight: 58 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MGIVEPGCGDMLTGTEPMPSDEGRGPGADQQHRFFYPEPGAQDPTDRRAGSSLGTPYSSGGALVP
AAPGRFLGSFAYPPRAQVAGFPGPGEFFPPPAGAEGYPPVDGYAPDPRAGLYPGPREDYALPAG
LEVSGKLRVALSNHLLWSKFNQHQTEMIITKQGRRMFPLSFTVAGLEPTSHYRMFVDVVLVDQHH
WRYQSGKWWQCCKAEGSMPGNRLYVHPDSPNTGAHWMRQEVSGKGLKLTNNKGASNNVTQMIV
LQSLHKYQPRHLHIVEVNDGEPEAAACSASNTHVFTFQETQFIAVTAYQNAEITQLKIDNNPFAKGFREN
FESMYASVDTSVSPPGPNCQLLGGDPFSPLLSNQYPVPSRFYPDLPGQPKDMISQPYWLGTPRE
HSYEAEFRAVSMKPTLLPSAPGPTVPYYRGQDVLAPGAGWPVAPQYPPKMSPAGWFRPMRTLPM
DPGLGSSEEQSSPSLWPEVTSLQPEPSDGLGEGDTKRRRISPYPSSGDS SSPAGAPSPFDKETE
GQFYNYFPN

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant T-box transcription factor TBX21 (T-box protein 21) (T-cell-specific T-box transcription factor T-bet) (Transcription factor TBLYM) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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. Activates transcription of a set of genes important for Th1 cell function, including those encoding IFN-gamma and the chemokine receptor CXCR3. 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 (PubMed:10761931, PubMed:17923685, PubMed:21095589). 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 transcriptional regulator RORC (PubMed:21151104). 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 (PubMed:15662016, PubMed:21690296, PubMed:23616576). 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 (PubMed:28623086). 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 (PubMed:27430722).

Subcellular Localization: Nucleus .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.