

Recombinant Mouse STAT1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51413

Size: 10ug, 100ug

Protein Name: Signal transducer and activator of transcription 1

Synonym: Stat1

UniProt ID: P42225

UniProt Link: www.uniprot.org/uniprotkb/P42225/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 749 AA

Molecular Weight: 87 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSQWFELQQLDSEKFLQVHQLYDDSFPMERQYLAQWLEKQDWEHAAYDVSFATIRFHDLLSQLDD
QYSRFSLENNFLLQHNIRKSKRNLQDNFQEDPVQMSMIYNCLKEERKILENAQRFNQAQEGNIQNT
VMLDKQKELDSKVRNVKDQVMCIEQEIKTLEELQDEYDFKCKTSQNREGEANGVAKSDQKQEQLLL
HKMFLMLDNKRKEIIHKIRELLNSIELTQNTLINDELVEWKRRQQSACIGPPNACLDQLQWFTIVAE
TLQQIRQQKLEELQKFTYEPDPITKNKQVLSDRFTLLFQQLIQSSFVVERQPCMPHPQRPLVLK
TGVQFTVKSRLLVKLQESNLLTKVKCHFDDKDVNEKNTVKGFRKFNILGTHTKVMNMEESTNGSLAAE
LRHLQLKEQKNAGNRTNEGPLIVTEELHSLSFETQLCQPGGLVIDLETTSLPVVISNVSQLPSGWASIL
WYNMLVTEPRNLSFFLNPPCAWWSQLSEVLSWQFSSVTKRGLNADQLSMLGEKLLGPNAGPDGLI
PWTRFCKENINDKNFSFWPWIDTILELIKNDLLCLWNDGCIMGFISKERERALLKDQQPGTFLLRFSE
SSREGAITFTWVERSQNGGEPDFHAVEPYTKKELSAVTFPDIIRNYKVMAAENIPENPLKYLYPNIDK
DHAFGKYYSRPKEAPEPEMELDDPKRTGYIKTELISVSEVHPSRLQTTDNLLPMSPEEFDEMSRIVGP
EFDSMMSTV

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 Signal transducer and activator of transcription 1 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: Signal transducer and transcription activator that mediates cellular responses to interferons (IFNs), cytokine KITLG/SCF and other cytokines and other growth factors (PubMed:11294897, PubMed:11972023, PubMed:19088846, PubMed:22065572, PubMed:9344858). Following type I IFN (IFN-alpha and IFN-beta) binding to cell surface receptors, signaling via protein kinases leads to activation of Jak kinases (TYK2 and JAK1) and to tyrosine phosphorylation of STAT1 and STAT2 (By similarity). The phosphorylated STATs dimerize and associate with ISGF3G/IRF-9 to form a complex termed ISGF3 transcription factor, that enters the nucleus (By similarity). ISGF3 binds to the IFN stimulated response element (ISRE) to activate the transcription of IFN-stimulated genes (ISG), which drive the cell in an antiviral state (PubMed:22065572). In response to type II IFN (IFN-gamma), STAT1 is tyrosine- and serine-phosphorylated (PubMed:11972023). It then forms a homodimer termed IFN-gamma-activated factor (GAF), migrates into the nucleus and binds to the IFN gamma activated sequence (GAS) to drive the expression of the target genes, inducing a cellular antiviral state (By similarity). Becomes activated in response to KITLG/SCF and KIT signaling (By similarity). May mediate cellular responses to activated FGFR1, FGFR2, FGFR3 and FGFR4 (PubMed:19088846). Following bacterial lipopolysaccharide (LPS)-induced TLR4 endocytosis, phosphorylated at Thr-748 by IKBKB which promotes binding of STAT1 to the 5'-TTTGAGGC-3' sequence in the ARID5A promoter, resulting in transcriptional activation of ARID5A and subsequent ARID5A-mediated stabilization of IL6 (By similarity). Phosphorylation at Thr-748 also promotes binding of STAT1 to the 5'-TTTGAGTC-3' sequence in the IL12B promoter and activation of IL12B transcription (By similarity). Involved in food tolerance in small intestine: associates with the Gasdermin-D, p13 cleavage product (13 kDa GSDMD) and promotes transcription of CIITA, inducing type 1 regulatory T (Tr1) cells in upper small intestine (PubMed:37327784).

Subcellular Localization: Cytoplasm . Nucleus . Note=Translocated into the nucleus upon tyrosine phosphorylation and dimerization, in response to IFN-gamma and signaling by activated FGFR1, FGFR2, FGFR3 or FGFR4. Monomethylation at Lys-525 is required for phosphorylation at Tyr-701 and translocation into the nucleus. Translocates into the nucleus in response to interferon-beta stimulation.

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.