

Recombinant Rat STAT3 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52392

Size: 10ug, 100ug

Protein Name: Signal transducer and activator of transcription 3

Synonym: Stat3

UniProt ID: P52631

UniProt Link: www.uniprot.org/uniprotkb/P52631/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 770 AA

Molecular Weight: 88 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAQWNQLQQLDTRYLEQLHQLYSDSFPMELRQFLAPWIESQDWAYAASKESHATLVFHNLLGEIDQ
QYSRFLQESNVLYQHNLRRKQFLQSRYLEKPMEIARIVARCLWEESRLLQTAATAAQGGQANHPT
AAVVTEKQQMLEQHLQDVRKRVQDLEQKMKVVENLQDDFDFNYKTLKSQGDMDQLNGNNSVTR
QKMQQLEQMLTALDQMRRSIVSELAGLLSAMEYVQKTLTDEELADWKRRQQIACIGGPPNICLDRLE
NWITSLAESQLQTRQQIKKLEELQQKVSYPKGDPIVQHRPMLLEERIVDLFRNLMKSAFVVERQPCMPM
HPDRPLVIKTGVQFTTKVRLLVKFPELNYQLKIKVCIDKDSGDVAALRGSRKFNLGTNTKVMNMEES
NNGSLSAEFKHLTLREQRCGNGGRANDASLIVTEELHLITFETEVYHQGLKIDLETHSLPVVVISNIC
QMPNAWASILWYNMLTNNPKNVNFFTKPPIGTWDQVAEVLWSQFSSTTKRGLSIEQLTTAEKLLGP
GVNYSGCQITWAKFCKENMAGKGFVFWLDNIIDLKYLALWNEGYIMGFISKERERAILSTKPP
GTFLRLRFSESSKEGGVFTFWVEKDISGKTQIQSVPEYTKQQLNNMSFAEIIIMGYKIMDATNILVSPLVY
LYPDIPKEEAFGKYCRPESQEHPADPGSAAPYLKTKFICVTPPTCSNTIDLPMSPRTLDSLMLQFGNN
GEGAEPSAGGQFESLTFDMDLTSECATSPM

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 3 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 interleukins, KITLG/SCF, LEP and other growth factors. Once activated, recruits coactivators, such as NCOA1 or MED1, to the promoter region of the target gene. May mediate cellular responses to activated FGFR1, FGFR2, FGFR3 and FGFR4. Upon activation of IL6ST/gp130 signaling by interleukin-6 (IL6), binds to the IL6-responsive elements identified in the promoters of various acute-phase protein genes. Activated by IL31 through IL31RA (By similarity). Acts as a regulator of inflammatory response by regulating differentiation of naive CD4(+) T-cells into T-helper Th17 or regulatory T-cells (Treg): acetylation promotes its transcription activity and cell differentiation while deacetylation and oxidation of lysine residues by LOXL3 inhibits differentiation (By similarity). Involved in cell cycle regulation by inducing the expression of key genes for the progression from G1 to S phase, such as CCND1 (By similarity). Mediates the effects of LEP on melanocortin production, body energy homeostasis and lactation. May play an apoptotic role by transactivating BIRC5 expression under LEP activation (By similarity). Cytoplasmic STAT3 represses macroautophagy by inhibiting EIF2AK2/PKR activity (By similarity). Plays a crucial role in basal beta cell functions, such as regulation of insulin secretion. Following JAK/STAT signaling activation and as part of a complex with NFATC3 and NFATC4, binds to the alpha-beta E4 promoter region of CRYAB and activates transcription in cardiomyocytes (PubMed:19538478). Plays an important role in host defense in methicillin-resistant S.aureus lung infection by regulating the expression of the antimicrobial lectin REG3G (By similarity).

Subcellular Localization: Cytoplasm . Nucleus . Note=Shuttles between the nucleus and the cytoplasm. Translocated into the nucleus upon tyrosine phosphorylation and dimerization, in response to signaling by activated FGFR1, FGFR2, FGFR3 or FGFR4. Constitutive nuclear presence is independent of tyrosine phosphorylation. Predominantly present in the cytoplasm without stimuli. Upon leukemia inhibitory factor (LIF) stimulation, accumulates in the nucleus. The complex composed of BART and ARL2 plays an important role in the nuclear translocation and retention of STAT3 (By similarity). Translocates to the nucleus in the presence of EDN1 (PubMed:19538478).

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.