

Recombinant Rat JAK3 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52497

Size: 10ug, 100ug

Protein Name: Tyrosine-protein kinase JAK3 (EC 2.7.10.2) (Janus kinase 3) (JAK-3)

Synonym: Jak3

UniProt ID: Q63272

UniProt Link: www.uniprot.org/uniprotkb/Q63272/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1100 AA

Molecular Weight: 123 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAPPSEETPLISQRSCSLSSSEAGALHVLLPPRGPQRLSFSFGDYLAEDLCVRAAKACGILPVY
HSLFALATEDLSCWFPPSHIFSIEDVDTQVLVYRLRFYFPGWFGLETCHRFGLHKDLTSAILDVHVLE
HLFAQHRSDLVSGRLPVGLSLKDQGEFLSLAVDLAQMARKQAQRPGELLKSVSYKACLPPSLRDLI
QGQSFVTRRRIRRTVVQALRRVVACQADRYALMAKYILDLERLHPAATTESFLVGLPGAQEEPGLR
VTGDNGIAWSSKDQELFQTFCDPFEIVDVSIKQAPRVGPAGEHRLVTITRMDGHILEAEFPGLPEALS
FVALVDGYFRLICDSRHFFCKEVAPPRLLLEEEAELCHGPITLDFAIHKLKAAGSLPGSYILRRSPQDYD
SFLTACVQTPLGPDYKGCILRQDPSGAFSLVGLSQLHRSLLQELLTACWHSGLQVDGTALNLTSCCV
PRPKEKSNLIVVRRGRNPTAPGHSPSCCALTKLSFHTIPADSLEWHENLGHGSFTKIFHGHRREV
DGETHDTEVLLKVMDSRHQNCMESFLEAASLMSQVSYPHLVLLHGVCMAGDSIMVQEFVYLGAIDT
YLRKRGHLPASWKLQVTKQLAYALNYLEDKGLPHGNVSARKVLLAREGVDGNPPFIKLSDPGVSP
TVLSLEMLTDRIWPVAPECLQEAGTLNLEADKWGFGATTWEVFSGAPMHITSLEPAKKLKFYEDRG
QLPALKWTELEGLIAQCMAYDPGRRPSFRILRDLNGLITSDYELLSDPTPGIPNPRDEL CGGAQLYA
CQDPAIFEERHLKYISLLGKGNFGSVELCRYDPLGDNTGPLVAVKQLQHSGPEQQRDFQREIQILKAL
HCD FIVKYRGVSYGPGRQSLRLVMEYLP SGCLRD FLQRHRLHNDRLLLFAWQICKGMEYLGARR
CVHRDLAARNILVESEAHVKIADFGLAKLLPLGKDYVYVREPGQSPIFWYAPESLSDNIFSRQSDVWS
FGVVLYELFTYSDKSCSPSTEF LRMMGP EREGSPLCHLLELLAEGRRLPPPSTCPT EVQELMQLCW
SPNPQDRPAFDTLSPQLDALWRGSPG

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 Tyrosine-protein kinase JAK3 (EC 2.7.10.2) (Janus kinase 3) (JAK-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: Non-receptor tyrosine kinase involved in various processes such as cell growth, development, or differentiation. Mediates essential signaling events in both innate and adaptive immunity and plays a crucial role in hematopoiesis during T-cells development. In the cytoplasm, plays a pivotal role in signal transduction via its association with type I receptors sharing the common subunit gamma such as IL2R, IL4R, IL7R, IL9R, IL15R and IL21R. Following ligand binding to cell surface receptors, phosphorylates specific tyrosine residues on the cytoplasmic tails of the receptor, creating docking sites for STATs proteins. Subsequently, phosphorylates the STATs proteins once they are recruited to the receptor. Phosphorylated STATs then form homodimer or heterodimers and translocate to the nucleus to activate gene transcription. For example, upon IL2R activation by IL2, JAK1 and JAK3 molecules bind to IL2R beta (IL2RB) and gamma chain (IL2RG) subunits inducing the tyrosine phosphorylation of both receptor subunits on their cytoplasmic domain. Then, STAT5A and STAT5B are recruited, phosphorylated and activated by JAK1 and JAK3. Once activated, dimerized STAT5 translocates to the nucleus and promotes the transcription of specific target genes in a cytokine-specific fashion (By similarity).

Subcellular Localization: Endomembrane system ; Peripheral membrane protein . Cytoplasm .

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.