

Recombinant Mouse JAK1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51465

Size: 10ug, 100ug

Protein Name: Tyrosine-protein kinase JAK1 (EC 2.7.10.2) (Janus kinase 1) (JAK-1)

Synonym: Jak1

UniProt ID: P52332

UniProt Link: www.uniprot.org/uniprotkb/P52332/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1153 AA

Molecular Weight: 133 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MQYLNKEDCNAMAFCAKMRSFKKTEVKQVVPEPGVEVTFYLLDREPLRLGSGEYTAEELCIRAAQE
CSISPLCHNLFALYDESTKLWYAPNRIITVDDKTSRLHYRMRFYFTNWHGTNDNEQSVWRHSPKKQ
KNGYEKKRVPEATPLLDASSLEYLFAQQGYDLIKCLAPIRDPKTEQDGHDIENECLGMAVLAISHYAM
MKKMQLPELPKDISYKRYIPETLNKSIRQRNLLTRMRINN VF KDFLKEFNNTICDSSVHDLKV KYLAT
LETSTLT KH YGAEIFETSM LLISS ENELSRCHSND SGNVLYEVMVTGNLGIQWRQKPNVVPVEKEKN
KLKRKKLEY NKHKDDERNKLREEWNNFSYFPEITHIVIKESVVSINKQDNKNMELKLSSREEALS FV
SLVDGYFRLTADAHHYLCTDVAPPLIVHNIQNGCHGPICTEYAINKL RQEGSEEGMYVLRWSCTDFD
NILMTVTCFEKSEVLGGQKQFKNFQIEVQKGRYSLHGSM DHFPSLRDLMNHLKKQILRTDNISFVLKR
CCQPKPREISNLLVATKKAQEWQPVYSMSQLSFDRLKKDIIQGEHLGRGTRTHIYSGTLLDYKDEEG
IAEEKKIKVILKVLDPSHRDISLAFFEAASMMRQVSHKHIVYLYGVCVRDVENIMVEEFVEGGPLDLFM
HRKSDALTTPWKFKVAKQLASALSYLEDKDLVHGNVCTKNLLAREGIDSDIGPFIKLSDPGIPVSVLT
RQECIERIPWIAPECVEDSKNLSVAADKWSFGTTLWEICYNGEIPLKDKTLIEKERFYESRCRPVTPS
CKELADLMTRCMNYDPNQRPFRAIMRDINKLEEQNPDIVSEKQPTTEVDPTHFEKRFLKRIRDLGE
GHFGKVELCRYDPEGDNTGEQVAVKSLKPESGGNHIADLKKEIEILRNLYHENIVKYKGICMEDGGN
GIKLIMEFLPSGSLKEYLPKNKNKINLKQQLKYAIQICKGMDYLGSRQYVHRDLAARNVLVESEHQVKI
GDFGLTKAIETDKEYYTVKDDRDSPVFWYAPECLIQCKFYIASDVWSFGVTLHELLTYCDSDFSPMA
LFLKMIGPTHGQMTVTRLVKTLKEGKRLPCPPNCPDEVYQLMRKCWEFQPSNRTTFQNLIEGFEALL
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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 JAK1 (EC 2.7.10.2) (Janus kinase 1) (JAK-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: Non-membrane spanning protein tyrosine kinase that phosphorylates signal-transducing subunits of cytokine receptor complexes like IL2RB, IL10RA, IFNAR2, IL6ST, LIFR, OSMR and IL31RA (PubMed:8272873). Functionally, is involved in the IFN-alpha/beta/gamma signal pathway. Mechanistically, in response to interferon-binding to IFNAR1-IFNAR2 heterodimer, phosphorylates and activates its binding partner IFNAR2, creating docking sites for STAT proteins. Directly phosphorylates STAT proteins but also activates STAT signaling through the transactivation of other JAK kinases associated with signaling receptors. Involved in the MT-RNR2/humanin-mediated signaling pathway leading to STAT3 phosphorylation. Binding of CNTF or the CLCF1/CLF heterodimer to CNTFR leads to IL6ST/gp130-LIFR dimerization followed by activation of JAK1 and JAK2 which in turns phosphorylate IL6ST/gp130 and LIFR. The tyrosine phosphorylated signaling receptors serve in turn as docking proteins for STAT3. Involved in the oncostatin-M-mediated signaling pathway through both type I OSM receptor complex (heterodimers composed of LIFR and IL6ST) and type II OSM receptor complex (heterodimers composed of OSMR and IL6ST) (By similarity). Involved in the Interleukin-31-mediated signaling pathway through the IL31 receptor complex (heterodimers composed of OSMR and IL31RA) (By similarity).

Subcellular Localization: Endomembrane system; Peripheral membrane protein. Note=Wholly intracellular, possibly membrane associated.

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.