

Recombinant Human TYK2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51033

Size: 10ug, 100ug

Protein Name: Non-receptor tyrosine-protein kinase TYK2 (EC 2.7.10.2)

Synonym: TYK2

UniProt ID: P29597

UniProt Link: www.uniprot.org/uniprotkb/P29597/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1187 AA

Molecular Weight: 134 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPLRHWGMARGSKPVGDGAQPMAMGGLKVLLHWAGPGGGEPWVTFSESSLTAEVCIHIAHKV
GITPPCFNLFALFDAQAQVWLPPNHILEIPRDASLMLYFRIRFYFRNWHGMNPREPAVYRCGPPGTE
ASSDQTAQGMQLLDPASFEYLFEEQKGHEFVNDVASLWELSTEEIIHHFKNESLGMFLHLCHLALR
HGIPLEEVAKKTSFKDCIPRSFRRHIRQHSALTRLRLRNVFRRFLRDFQPGRLSQQMVMVKYLATLE
RLAPRFGTERVPVCHLRLLAQAECEPCYIRD SGVAPTDPGPESAAGPPTHEVLVTGTGGIQWWPVE
EEVNKEEGSSGSSGRNPQASLFGKKAKAHKAVGQPADRPREPLWAYFCDFRDITHVVLKEHCVSIH
RQDNKCLELSLPSRAAALS FVSLVDGYFRLTADSSHYLCHEVAPPRLVMSIRDGIHGPLEPFVQAKL
RPEDGLYLIHWSTSHPYRLILTVAQRSQAPDGMQSLRLRKFPFIEQQDGAFLVLEGWGRSFPSVRELG
AALQGCLLRAGDDCFSLRRCCLPQPGETSNLIIMRGARASPTLNLSQLSFHRVDQKEITQLSHLGQ
GTRTNVYEGRLRVEGSGDPEEGKMDDDEPLVPGRDRGQELRVVLKVLDP SHHDIALAFYETASLMS
QVSHTHLAFVHGVCGVRGPENIMVTEYVEHGPLDVWLRERRGHVPMWKMVVAQQLASALSYLENK
NLVHGNVCGRNILLARLGLAEGTSPFIKLSDPGVLGLALSREERVERIPWLAPECLPGGANSLSLAM
DKWGF GATLLEICFDGEAPLQSRSPSEKEHFYQRQHRLPEPSCPQLATLTSQCLTYEPTQRPSFRTI
LRDLTRLQPHNLADVLT VNPDSPASDPTVFHKRYLKKIRDLGEGHFGKVS LYCYDPTNDGTGEMVA
VKALKADCGPQHRSGWKQEIDILRTLYHEHIIKYKGCCEDQGEKSLQLVMEYVPLGSLRDYLP RHSI
GLAQLLLFAQQICEGMAYLHAQHYIHRDLAARNVLLDNDRLVKIGDFGLAKAVPEGHEYYRVREDGD
SPVFWYAPECLKEYKFYYASDVWSFGVTLYELLTHCDSSQSPPTKFLELIGIAQQGQMTVLRLTELLER
GERLPRPKCPCEVYHLMKNCWETEASFRPTFENLIPILKTVHEKYQQGQAPS VFSVC

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 Non-receptor tyrosine-protein kinase TYK2 (EC 2.7.10.2) 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 involved in numerous cytokines and interferons signaling, which regulates cell growth, development, cell migration, innate and adaptive immunity (PubMed:10542297, PubMed:10995743, PubMed:7657660, PubMed:7813427, PubMed:8232552). Plays both structural and catalytic roles in numerous interleukins and interferons (IFN-alpha/beta) signaling (PubMed:10542297). Associates with heterodimeric cytokine receptor complexes and activates STAT family members including STAT1, STAT3, STAT4 or STAT6 (PubMed:10542297, PubMed:7638186). The heterodimeric cytokine receptor complexes are composed of (1) a TYK2-associated receptor chain (IFNAR1, IL12RB1, IL10RB or IL13RA1), and (2) a second receptor chain associated either with JAK1 or JAK2 (PubMed:10542297, PubMed:25762719, PubMed:7526154, PubMed:7813427). In response to cytokine-binding to receptors, phosphorylates and activates receptors (IFNAR1, IL12RB1, IL10RB or IL13RA1), creating docking sites for STAT members (PubMed:7526154, PubMed:7657660). In turn, recruited STATs are phosphorylated by TYK2 (or JAK1/JAK2 on the second receptor chain), form homo- and heterodimers, translocate to the nucleus, and regulate cytokine/growth factor responsive genes (PubMed:10542297, PubMed:25762719, PubMed:7657660). Negatively regulates STAT3 activity by promoting phosphorylation at a specific tyrosine that differs from the site used for signaling (PubMed:29162862). 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) (PubMed:9188471).

Subcellular Localization: N/A

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.