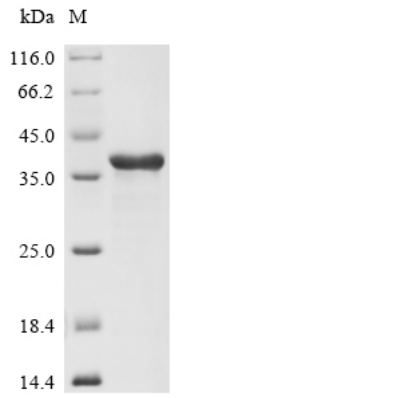
Recombinant Human Non-receptor tyrosine-protein kinase TYK2 (TYK2), partial

Product Code	CSB-EP025391HU5
Abbreviation	Recombinant Human TYK2 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P29597
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	ITQLSHLGQGTRTNVYEGRLRVEGSGDPEEGKMDDEDPLVPGRDRGQELRV VLKVLDPSHHDIALAFYETASLMSQVSHTHLAFVHGVCVRGPENIMVTEYVEH GPLDVWLRRERGHVPMAWKMVVAQQLASALSYLENKNLVHGNVCGRNILLA RLGLAEGTSPFIKLSDPGVGLGALSREERVERIPWLAPECLPGGANSLSTAMD KWGFGATLLEICFDGEAPLQSRSPSEKEHFYQRQHRLPEPSCPQLATLTSQCL TYEPTQRPSFRTILRDLTRLQPHNLA
Research Area	Signal Transduction
Source	E.coli
Target Names	TYK2
Expression Region	589-875aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	37.9 kDa
Protein Length	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Human Non-receptor tyrosine-protein kinase TYK2 (TYK2) is produced in E. coli and spans amino acids 589-875 with a partial sequence length. The protein includes an N-terminal 6xHis-tag, which makes purification and detection more straightforward. SDS-PAGE analysis shows purity levels above 90%. This product is strictly for research purposes—it's not meant for therapeutic use. The manufacturing process appears designed to keep endotoxin contamination to minimal levels.

TYK2 belongs to the Janus kinase family and plays an important role in transmitting cytokine-mediated signals. It participates in several signaling pathways, particularly those connected to immune response and inflammation. Given its central position in these pathways, TYK2 has become a major research focus for scientists studying immune regulation mechanisms and exploring potential therapeutic targets for immune-related diseases.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. In Vitro Kinase Domain Structural Studies

This recombinant TYK2 fragment (589-875aa) covers the kinase domain region and works well for structural biology research, including X-ray crystallography and NMR studies. The high purity (>90%) and N-terminal His-tag make protein purification and handling easier during structural characterization experiments. These studies may provide valuable insights into the three-dimensional structure of the TYK2 kinase domain and how it changes shape under different conditions. Researchers can also use the purified protein to examine how stable the domain is and how it folds when exposed to different buffer systems.

2. Antibody Development and Validation

The His-tagged TYK2 kinase domain works as either an immunogen or screening antigen when developing research antibodies that target this specific

protein region. High purity levels help reduce contamination that might otherwise create cross-reactive antibodies against bacterial proteins. Scientists can use this recombinant fragment in ELISA-based screening of hybridoma supernatants or phage display libraries to find TYK2-specific binding clones. It also serves as a reliable positive control when validating newly developed anti-TYK2 antibodies through Western blot analysis.

3. Protein-Protein Interaction Studies

The purified TYK2 kinase domain can be used in pull-down assays to discover potential binding partners or substrates that interact with this particular region. The N-terminal His-tag allows researchers to attach the protein to nickel-affinity matrices, which then capture interacting proteins from cell lysates or purified protein libraries. This method may help researchers map out the TYK2 kinase domain's interaction network and identify previously unknown regulatory proteins. The fragment also works in surface plasmon resonance or bio-layer interferometry experiments to measure binding kinetics with established interaction partners.

4. Biochemical Characterization and Inhibitor Screening

While biological activity testing wasn't performed, this TYK2 kinase domain fragment can help establish and optimize kinase activity assays using suitable substrates and ATP. The purified protein provides a consistent reagent for developing biochemical assays to test potential kinase inhibitors in research settings. The His-tag makes purification simple and allows for easy concentration adjustments needed in dose-response studies. Researchers might also use this fragment to investigate how various cofactors, pH levels, and buffer compositions affect kinase domain stability and possible enzymatic activity.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.