# Recombinant Mouse Tyrosine-protein kinase JAK1 (Jak1), partial

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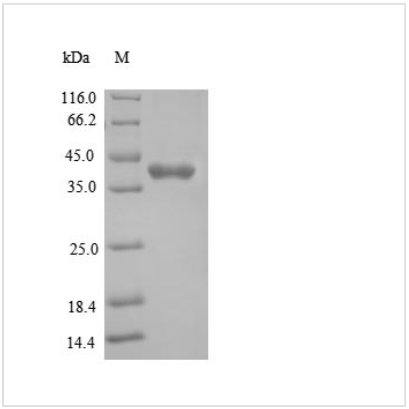
| **Product Code** | CSB-EP011930MO |
| **Relevance** | Tyrosine kinase of the non-receptor type, involved in the IFN-alpha/beta/gamma signal pathway. Kinase partner for the interleukin (IL)-2 receptor. ATP + a [protein]-L-tyrosine = ADP + a [protein]-L-tyrosine phosphate. |
| **Abbreviation** | Recombinant Mouse Jak1 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.** | P52332 |
| **Alias** | Janus kinase 1 Short name: JAK-1 |
| **Product Type** | Recombinant Protein |
| **Immunogen Species** | Mus musculus (Mouse) |
| **Purity** | Greater than 90% as determined by SDS-PAGE. |
| **Sequence** | EEQNPDIVSEKQPTTEVDPTHFEKRFLKRIRDLGEGHFGKVELCRYDPEGDNT GEQVAVKSLKPESGGNHIADLKKEIEILRNLYHENIVKYKGICMEDGGNGIKLIM EFLPSGSLKEYLPKNKNKINLKQQLKYAIQICKGMDYLGSRQYVHRDLAARNVL VESEHQVKIGDFGLTKAIETDKEYYTVKDDRDSPVFWYAPECLIQCKFYIASDV WSFGVTLHELLTYCDSDFSPMALFLKMIGPTHGQMTVTRLVKTLKEGKRLPCP PNCPDEVYQLMRKCWEFQPSNRTTFQNLIEGFEALL |
| **Research Area** | Others |
| **Source** | E.coli |
| **Target Names** | Jak1 |
| **Expression Region** | 848-1152aa |
| **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** | 39.1kDa |
| **Protein Length** | Partial |
| **Image** | |




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

## Description

Recombinant Mouse Tyrosine-protein kinase JAK1 (Jak1) is expressed in E. coli with an N-terminal 6xHis-tag that simplifies purification. This partial protein covers amino acids 848-1152 and shows purity levels above 90%, confirmed through SDS-PAGE analysis. Designed strictly for research purposes, this product offers scientists a useful tool for investigating kinase function and signaling pathways.

JAK1 appears to play a vital role in how various cytokines and growth factors communicate within cells. Being part of the Janus kinase family, JAK1 seems responsible for phosphorylating and activating STAT proteins—signal transducer and activator of transcription proteins that carry messages from cell surfaces to the nucleus. Understanding this protein may be essential for grasping how cells respond and regulate themselves, particularly in immune and blood-forming systems.

### 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 Activity Assays

This recombinant JAK1 kinase domain (848-1152aa) works well for setting up and fine-tuning kinase activity assays with different substrates and ATP analogs. The purified protein makes controlled biochemical studies possible, helping researchers characterize kinase parameters like Km values, substrate specificity, and reaction kinetics. Its N-terminal 6xHis tag makes purification straightforward and allows for immobilization in high-throughput screening setups. These assays might serve as fundamental tools for understanding JAK1's enzymatic behavior in controlled laboratory conditions.

### 2. JAK1-Specific Antibody Development and Validation

The highly pure recombinant JAK1 kinase domain could work as an immunogen for creating monoclonal or polyclonal antibodies that target this particular JAK1

region. The well-defined 848-1152aa sequence gives researchers a characterized antigen for antibody production and follow-up validation work. The 6xHis tag makes antigen purification and quantification relatively simple for immunization procedures. Researchers can then validate any resulting antibodies using this same recombinant protein in ELISA, Western blot, and similar immunoassays.

**3. Protein-Protein Interaction Studies**

This JAK1 kinase domain appears useful in pull-down assays and binding experiments aimed at identifying and characterizing proteins that interact with this specific region. The N-terminal 6xHis tag makes it possible to attach the protein to nickel-based resins for affinity purification experiments using cell lysates or purified proteins. The 305-amino acid fragment lets researchers focus on interactions that the kinase domain specifically mediates. Such studies might help scientists map where binding occurs and measure how strong these protein-protein interactions really are.

**4. Structural and Biophysical Characterization**

The purified recombinant JAK1 kinase domain supplies material for structural biology techniques including X-ray crystallography, NMR spectroscopy, and cryo-electron microscopy studies. Its high purity and clearly defined sequence boundaries make it suitable for biophysical analyses like dynamic light scattering, differential scanning calorimetry, and circular dichroism spectroscopy. The E. coli expression system and 6xHis tag help produce the large quantities needed for structural work. These approaches could reveal important details about the three-dimensional structure and how the JAK1 kinase domain moves and changes shape.

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| **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.<br>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. |