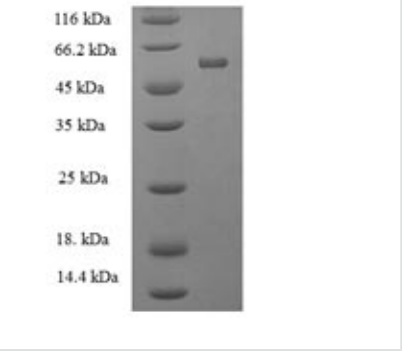
Recombinant Human protein-tyrosine-phosphatase (PTPRR)

Product Code	CSB-EP624019HU
Abbreviation	Recombinant Human PTPRR protein
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.	Q05B41
Product Type	Recombinant Proteins
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MILHRLKERFQLSLRQDKEKNQEIHLSPITLQPALSEAKTVHSMVQPEQAPKVL NVVVDPQGRGAPEIKATTATSVCPSPFKMKPIGLQKRRGSNVSLTLDMSSLGN IEPFVSIPTPREKVAMEYLQSASRILTRSQLRDVVASSHLLQSEFMEIPMNFVDP KEIDIPRHGTKNRYKTILPNPLSRVCLRPKNVTDSLSTYINANYIRGYSGKEKAFI ATQGPMINTVDDFWQMVWQEDSPVIVMITKLKEKNEKCVLYWPEKRGIYGKV EVLVISVNECDNYTIRNLVLKQGSHTQHVKHYWYTSWPDHKTPDSAQPLLQL MLDVEEDRLASQGRGPVVVHCSAGIGRTGCFIATSIGCQQLKEEGVVDALSIV CQLRMDRGGMVQTSEQYEFVHHALCLYESRLSAETVQ
Research Area	Neuroscience
Source	E.coli
Target Names	PTPRR
Expression Region	1-412aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	62.6kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Human protein-tyrosine-phosphatase (PTPRR) is expressed in E. coli and spans the complete sequence of 1-412 amino acids. The protein includes an N-terminal 6xHis-SUMO tag, which allows for straightforward purification and detection. Purity levels exceed 90%, as confirmed by SDS-PAGE, suggesting consistent quality for research applications. This protein is intended for research use only.

Protein-tyrosine-phosphatase (PTPRR) appears to play a central role in cellular signaling by regulating phosphorylation states. The enzyme is involved in modulating various signaling pathways through dephosphorylation of tyrosine residues on target proteins. PTPRR likely influences processes such as cell growth and differentiation by controlling the activity of specific kinases and phosphatases. This makes it an attractive target for research in cellular and molecular biology.

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. Protein-Protein Interaction Studies Using Pull-Down Assays

The N-terminal 6xHis-SUMO tag makes purification and immobilization of this recombinant PTPRR protein relatively straightforward for pull-down experiments. Scientists can deploy this protein as bait to identify potential binding partners or substrates from cell lysates or purified protein libraries. The SUMO tag may provide additional stability and solubility while preserving the protein's native folding state. This approach could be particularly useful for mapping the interactome of PTPRR and understanding its role in cellular signaling networks.

2. Antibody Development and Validation

The high purity (>90%) and full-length nature of this recombinant PTPRR makes it a strong candidate as an immunogen for generating specific antibodies

against human PTPRR. The protein can serve as a positive control in Western blotting, immunoprecipitation, and ELISA-based assays during antibody characterization. The His-SUMO tag simplifies purification and quantification for standardized immunization protocols. The recombinant protein may also help validate antibody specificity and determine optimal working concentrations for various immunoassays.

3. Structural and Biophysical Characterization Studies

This full-length recombinant PTPRR protein (1-412aa) offers an opportunity to investigate the structural properties and conformational dynamics of the complete protein. Scientists can apply techniques such as circular dichroism spectroscopy, dynamic light scattering, and analytical ultracentrifugation to characterize protein folding, stability, and oligomerization states. If needed for structural studies requiring tag-free protein, the His-SUMO tag can be removed by SUMO protease. These studies may contribute to understanding the relationship between PTPRR structure and its biological function.

4. In Vitro Enzyme Kinetics and Inhibitor Screening

While biological activity testing was not performed, this recombinant PTPRR could be used to establish and optimize phosphatase activity assays using synthetic or natural phosphotyrosine-containing substrates. Researchers might develop colorimetric or fluorometric assays to measure enzymatic activity and determine kinetic parameters such as Km and Vmax. The purified protein serves as a potentially valuable tool for screening inhibitors or modulators of PTPRR activity in drug discovery research. The stable His-SUMO tag allows for consistent protein handling and storage during extended screening campaigns.

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.