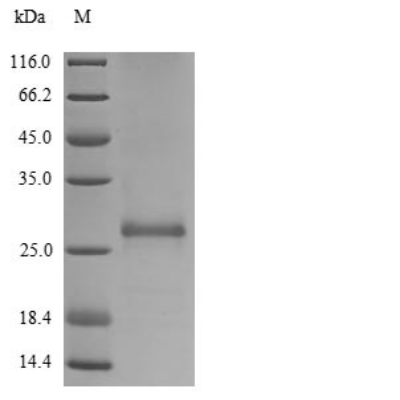
Recombinant Human Glutathione S-transferase P (GSTP1)

Product Code	CSB-YP009989HUb0
Relevance	Conjugation of reduced glutathione to a wide number of exogenous and endogenous hydrophobic electrophiles. Regulates negatively CDK5 activity via p25/p35 translocation to prevent neurodegeneration.
Abbreviation	Recombinant Human GSTP1 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.	P09211
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	PPYTVVYFPVRGRCAALRMLLADQGQSWKEEVVTVETWQEGSLKASCLYGQ LPKFQDGDLTLYQSNTILRHLGRTLGLYGKDQQEAALVDMVNDGVEDLRCKYI SLIYTNYEAGKDDYVKALPGQLKPFETLLSQNQGGKTFIVGDQISFADYNLLDL LLIHEVLAPGCLDAFPLLSAYVGRLSARPKLKAFLASPEYVNLPINGNGKQ
Research Area	Metabolism
Source	Yeast
Target Names	GSTP1
Protein Names	GST class-piGSTP1-1
Expression Region	2-210aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged
Mol. Weight	25.7 kDa
Protein Length	Full Length of Mature Protein
Image	



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

Description

Recombinant Human Glutathione S-transferase P (GSTP1) is produced in a yeast expression system, which appears to ensure high fidelity of protein folding and stability. The full-length mature protein spans amino acids 2 to 210. It comes with an N-terminal 10xHis-tag that makes purification and detection in research applications more straightforward. SDS-PAGE verification shows the purity exceeds 90%, suggesting this protein may be a reliable tool for biochemical assays and experimental studies.

Glutathione S-transferase P (GSTP1) belongs to the glutathione S-transferase family. These enzymes seem to play a crucial role in detoxifying both endogenous and exogenous compounds through conjugation with glutathione. GSTP1 is likely involved in cellular processes like detoxification and protection against oxidative stress. This makes it a significant focus in research related to cancer, drug resistance, and toxicology studies.

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 His-Tag Pull-Down Assays

The N-terminal 10xHis tag on this recombinant GSTP1 allows for nickel-affinity based pull-down experiments to identify potential binding partners or substrates. Researchers can immobilize the protein on nickel-coated beads or columns, then incubate it with cell lysates or purified protein libraries to capture interacting molecules. This approach appears particularly valuable for studying GSTP1's role in cellular detoxification pathways and identifying novel regulatory proteins. The >90% purity should minimize background binding from contaminant proteins during interaction studies.

2. Antibody Development and Validation

This recombinant GSTP1 can serve as an immunogen for generating specific antibodies against human GSTP1. It also works as a positive control for

validating existing antibodies. The full-length mature protein (aa 2-210) provides complete antigenic epitopes for comprehensive antibody screening. High purity (>90%) suggests that generated antibodies will likely be specific to GSTP1 rather than contaminating proteins. The His-tag can also be used in ELISA-based antibody characterization assays using anti-His detection systems.

3. Biochemical Characterization and Enzyme Kinetics Studies

While biological activity hasn't been tested, this recombinant protein may be used to establish and optimize activity assays for glutathione S-transferase function. Standard GST substrates like CDNB (1-chloro-2,4-dinitrobenzene) could work for this purpose. Researchers can assess the protein's structural integrity through various biochemical techniques including circular dichroism spectroscopy and thermal stability assays. Once activity is confirmed, kinetic parameters and substrate specificity can be determined, potentially providing valuable data for understanding GSTP1 function in detoxification processes.

4. Inhibitor Screening and Drug Discovery Research

This recombinant GSTP1 might be used in high-throughput screening assays to identify potential inhibitors or modulators of glutathione S-transferase activity. The His-tag makes protein immobilization for screening platforms easier. High purity should reduce interference in optical or fluorescence-based detection systems. Compound libraries can be tested for their effects on GSTP1 function, which may contribute to developing research tools for studying cellular detoxification mechanisms.

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.