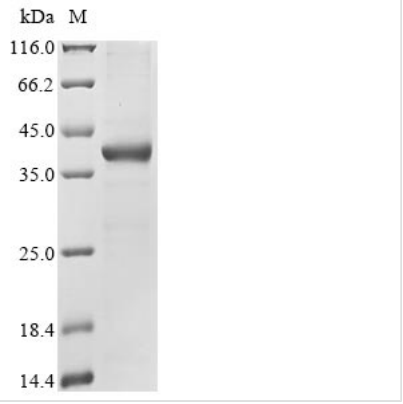
Recombinant Human Epididymal secretory glutathione peroxidase (GPX5)

Product Code	CSB-EP009870HUc0
Abbreviation	Recombinant Human GPX5 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.	O75715
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 85% as determined by SDS-PAGE.
Sequence	MTTQLRVVHLLPLLLACFVQTSPKQEKMKMDCHKDEKGTIYDYEAIALNKNEY VSFKQYVGKHILFVNVATYCGLTAQYPGMSVQGEDLYLVSSFLRKGM
Research Area	Signal Transduction
Source	E.coli
Target Names	GPX5
Expression Region	1-100aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-GST-tagged
Mol. Weight	42.9 kDa
Protein Length	Full Length of Isoform 2
Image	



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

Description

Recombinant Human Epididymal secretory glutathione peroxidase (GPX5) is produced in E. coli and features an N-terminal 6xHis-GST tag that makes purification straightforward. This full-length Isoform 2 protein contains amino acids 1-100 and shows a purity level greater than 85% as determined by SDS-PAGE. This product is intended for research use only and is not suitable for diagnostic or therapeutic applications.

Epididymal secretory glutathione peroxidase (GPX5) is an antioxidant enzyme that appears to play a crucial role in protecting cells from oxidative stress by reducing lipid hydroperoxides and hydrogen peroxide. It belongs to the glutathione peroxidase family, which seems integral to cellular defense mechanisms against reactive oxygen species. GPX5 may be particularly relevant in reproductive biology, where it's involved in maintaining the integrity of sperm cells.

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. Biochemical Characterization and Enzyme Kinetics Studies

This recombinant GPX5 protein can be used to investigate the fundamental biochemical properties of human epididymal secretory glutathione peroxidase. This includes substrate specificity, optimal pH and temperature conditions, and cofactor requirements. The N-terminal His-GST tag makes purification and immobilization easier for detailed kinetic analyses. Researchers might compare the enzymatic properties of this truncated form (1-100aa) with full-length GPX5 to understand structure-function relationships. The high purity level (>85%) makes it suitable for quantitative biochemical assays and mechanistic studies.

2. Antibody Development and Validation

The recombinant GPX5 protein serves as an excellent immunogen and standard for developing specific antibodies against human GPX5. The His-GST tag

allows easy purification and quantification for consistent antibody production protocols. Researchers can use this protein to validate antibody specificity, determine binding affinities, and establish detection limits in various immunoassays. The defined protein sequence and purity appear ideal for generating both polyclonal and monoclonal antibodies for subsequent research applications.

3. Protein-Protein Interaction Studies

The dual His-GST tag system makes this recombinant GPX5 particularly well-suited for pull-down assays to identify potential binding partners or interacting proteins in epididymal tissue extracts or other relevant biological samples. The GST tag allows for glutathione-based affinity purification while the His tag provides an alternative purification strategy and detection method. Researchers can investigate how GPX5 may interact with other antioxidant enzymes, structural proteins, or regulatory molecules in the male reproductive system.

4. Comparative Structural and Functional Analysis

This truncated GPX5 construct (1-100aa) can be used in comparative studies to understand the functional domains and structural requirements of glutathione peroxidase family members. Researchers might analyze how this N-terminal region contributes to overall protein stability, folding, and potential catalytic activity compared to other GPX isoforms. The recombinant protein enables detailed biophysical characterization including circular dichroism spectroscopy, dynamic light scattering, and thermal stability analyses to understand the structural properties of this specific GPX5 region.

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.