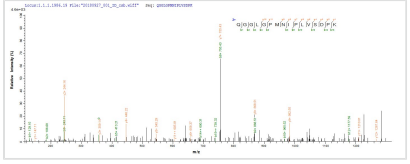
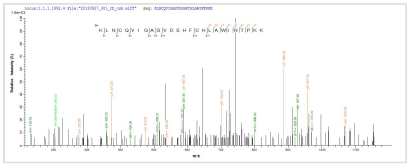
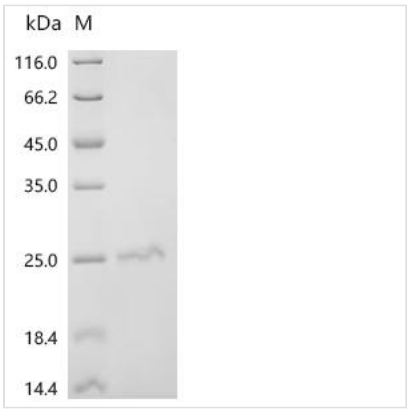
Recombinant Cricetulus griseus Peroxiredoxin-1 (PRDX1)

Product Code	CSB-YP872876DXU
Abbreviation	Recombinant Cricetulus griseus P4HB 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.	Q9JKY1
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	Cricetulus griseus (Chinese hamster) (Cricetulus barabensis griseus)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	SSGNAKIGYPAPNFKATAVMPDGQFRDICLSEYRGKYVVFFFYPLDFTFVCPT EIIAFSDRAEEFKKLNCQVIGASVDSHFCHLAWINTPKKQGGLGPMNIPLVSDP KRTIAQDYGVLKADEGISFRGLFIIDDKGILRQITINDLPVGRSVDEILRLVQAFQF TDKHGEVCPAGWKPGSDTIKPDVQKSKEYFSKQK
Research Area	Cardiovascular
Source	Yeast
Target Names	PRDX1
Protein Names	Recommended name: Peroxiredoxin-1 EC= 1.11.1.15Alternative name(s): Thioredoxin peroxidase 2 Short name= TPX-2
Expression Region	2-199aa
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	24.2 kDa
Protein Length	Full Length of Mature Protein
Image	 Based on the SEQUEST from database of Yeast host and target protein, the LC-MS/MS Analysis result of CSB-YP872876DXU could indicate that this peptide derived from Yeast-expressed Cricetulus griseus (Chinese hamster) (Cricetulus barabensis griseus) PRDX1.



Based on the SEQUEST from database of Yeast host and target protein, the LC-MS/MS Analysis result of CSB-YP872876DXU could indicate that this peptide derived from Yeast-expressed Cricetulus griseus (Chinese hamster) (Cricetulus barabensis griseus) PRDX1.



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

Description

The recombinant Cricetulus griseus Peroxiredoxin-1 (PRDX1) is produced by manipulating the expression of specific genes in yeast cells. The gene fragment encoding the Cricetulus griseus PRDX1 protein (2-199aa) is fused to an expression vector along with the N-terminal 6xHis-tag gene and subsequently transformed into yeast cells. The cells that successfully integrate the vector are selected and cultured to induce the expression of the desired protein. The recombinant Cricetulus griseus PRDX1 protein is then purified using affinity purification, achieving a purity level of over 90%, as confirmed by SDS-PAGE analysis.

PRDX1 is a multifunctional protein that acts as a hydrogen peroxide scavenger, a molecular chaperone, and an immune modulator [1]. PRDX1 protects cells from oxidative stress by scavenging oxidants and regulating reactive oxygen species [2][3]. PRDX1 is also involved in different types of cancers, such as breast cancer, colorectal cancer, esophageal cancer, osteosarcoma, head and neck squamous cell carcinoma, and renal cell carcinoma [1][4][2][5][6][7]. In breast cancer, PRDX1 has been identified as a protein biomarker associated with a favorable prognosis [1].

PRDX1 regulates various cellular processes, including cell growth, differentiation, apoptosis, and metastasis [1][8][5][6]. PRDX1 promotes the proliferation and metastasis of cancer cells by enhancing the Akt/mTOR pathway [5]. Additionally, PRDX1 can drive cancer progression by inhibiting ferroptosis and suppressing NRF2 degradation [4]. In esophageal squamous cell carcinoma, PRDX1 causes primary cilia loss, leading to tumor formation [9].

It has been demonstrated that PRDX1 inhibits tumorigenesis by modulating PTEN/AKT signaling pathways [10]. Additionally, PRDX1 has been associated with endothelial activation and early atherosclerosis, suggesting its involvement in vascular health [11].

References:
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Shelf Life

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