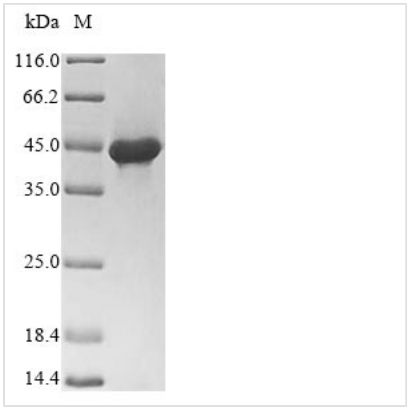
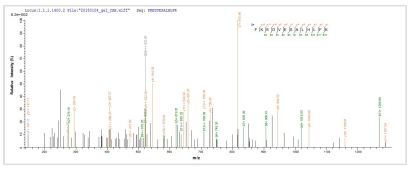
Recombinant Lymphocytic choriomeningitis virus Pre-glycoprotein polyprotein GP complex (GPC), partial

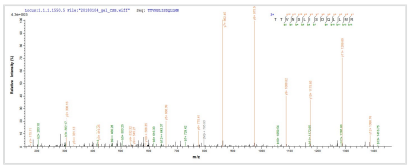
Product Code	CSB-EP357830LKW
Relevance	Stable signal peptide (SSP) is cleaved but is apparently retained as the third component of the GP complex. The SSP is required for efficient glycoprotein expression, post-translational cleavage of GP1 and GP2, glycoprotein transport to the cell plasma membrane, formation of infectious virus particles, and acid pH-dependent glycoprotein-mediated cell fusion.
Abbreviation	Recombinant Lymphocytic choriomeningitis virus GPC 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.	P09991
Alias	Stable signal peptide Short name: SSP Glycoprotein G1 Short name: GP1 Glycoprotein G2 Short name: GP2
Product Type	Recombinant Protein
Immunogen Species	Lymphocytic choriomeningitis virus (strain Armstrong) (LCMV)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	GTFTWTLSDSSGVENPGGYCLTKWMILAAELKCFGNTAVAKCNVNHDAEFCD MLRLIDYNKAALSKFKEDVESALHLFKTTVNSLISDQLLMRNHLRDLMGVPYCN YSKFWYLEHAKTGETSVPKCWLVTNGSYLNETHFSDQIEQEADNMITEMLRK DYIKRQGSTPLALMDLLMFSTSAYLVSIFLHLVKIPTHRHIKGGSCPKPHRLTNK GICSCGAFKVPGVKTVWKRR
Source	E.coli
Target Names	GPC
Expression Region	266-498aa
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	42.4kDa
Protein Length	Partial
Image	



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



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP357830LKW could indicate that this peptide derived from E.coli-expressed Lymphocytic choriomeningitis virus (strain Armstrong) (LCMV) GPC.



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Description

The Glycoprotein precursor (GPC) is a crucial protein found in arenaviruses that undergoes posttranslational cleavage to produce the components forming the GP complex. The GPC is expressed as a polyprotein that is co-translationally cleaved to yield the stable signal peptide (SSP), GP1, and GP2 subunits [1][2]. Maturation of the GPC involves proteolytic cleavage into the SSP, GP1 attachment glycoprotein, and GP2 fusion glycoprotein [3]. The mature GPC complex is metastable and is primed to mediate membrane fusion in response to acidic pH [4]. The virion form of GPC is a trimer of heterodimers containing the receptor-binding subunit GP1 and the fusion-mediating subunit GP2 [5]. The GPC precursor is proteolytically cleaved by the cellular subtilase SKI-1/S1P to yield the mature glycoproteins G1 and G2 [6].

The GPC is essential for the assembly and function of arenaviruses, playing a critical role in viral entry into host cells and serving as a target for antibody-mediated neutralization [5]. The processing of the GPC precursor is a highly regulated mechanism involving cellular enzymes and proteases [7]. The signal peptide of the GPC is myristoylated and forms an essential subunit of the mature G1-G2 complex [6]. Additionally, the GPC precursor undergoes cleavage to generate the GP1 and GP2 subunits, which are crucial for viral attachment and membrane fusion [8].

References:
[1] A. Capul, M. Perez, E. Burke, S. Kunz, M. Buchmeier, & J. Torre, "Arenavirus z-glycoprotein association requires z myristoylation but not functional ring or late domains", Journal of Virology, vol. 81, no. 17, p. 9451-9460, 2007.

https://doi.org/10.1128/jvi.00499-07
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[5] K. Hastie, M. Zandonatti, L. Kleinfelter, M. Heinrich, M. Rowland, K. Chandranet al., "Structural basis for antibody-mediated neutralization of lassa virus", Science, vol. 356, no. 6341, p. 923-928, 2017. https://doi.org/10.1126/science.aam7260
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[7] D. Burri, G. Pasqual, C. Rochat, N. Seidah, A. Pasquato, & S. Kunz, "Molecular characterization of the processing of arenavirus envelope glycoprotein precursors by subtilisin kexin isozyme-1/site-1 protease", Journal of Virology, vol. 86, no. 9, p. 4935-4946, 2012. https://doi.org/10.1128/jvi.00024-12
[8] D. Burri, J. Palma, S. Kunz, & A. Pasquato, "Envelope glycoprotein of arenaviruses", Viruses, vol. 4, no. 10, p. 2162-2181, 2012. https://doi.org/10.3390/v4102162

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.