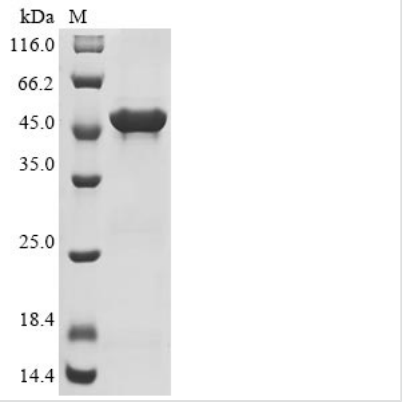
Recombinant Hamster polyomavirus Major capsid protein VP1

Product Code	CSB-EP355947HBZ
Abbreviation	Recombinant Hamster polyomavirus Major capsid protein VP1 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.	P03092
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	Hamster polyomavirus (HaPyV) (Mesocricetus auratus polyomavirus 1)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MCKPLWKPCPKPANVPKLIMRGGVGVLDLVTGEDSITQIEAYLNPRMGQNKP GTGTDGQYYGFSQSIKVNSSLTADEVKANQLPYYSMAKIQLPTLNEDLTCDTL QMWEAVSVKTEVVGVGSLLNVHGYGSRSETKDIGISKPVEGTTYHMFAVGGE PLDLQGLVQNYNANYEAAIVSIKTVTGKAMTSTNQVLDPTAKAKLDKDGRYPIE IWGPDPSKNENSRYYGNFTGGTGTPPVMQFTNTLTTVLLDENGVGPLCKGDG LYLSAADVMGWYIEYNSAGWHWRGLPRYFNVTLRKRWVKNPYPVTSLLASLY NNMLPTIEGQPMEGEAAQVEEVRIYEGTEAVPGDPDVNRFIDKYGQQHTKPP AKPAN
Research Area	Immunology
Source	E.coli
Target Names	N/A
Expression Region	1-372aa
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 and C-terminal Myc-tagged
Mol. Weight	48.3 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant hamster polyomavirus major capsid protein VP1 generation begins with isolating the target gene, which covers the full-length VP1 (1-372aa). This gene is linked with an N-terminal 10xHis-tag and C-terminal Myc-tag gene and then cloned into an expression vector, which is transfected into E. coli cells for protein expression. The recombinant VP1 protein is purified from the cell lysate through affinity chromatography. Its purity is over 85% as determined by SDS-PAGE.

The HaPyV VP1 protein is the major capsid protein of the Hamster Polyomavirus. Research has shown that the HaPyV VP1 protein can be utilized as a carrier for creating autologous, chimeric, and mosaic VLPs, which are valuable in producing epitope-specific antibodies [1]. The authentic HaPyV VP1 protein consists of 384 amino acid residues and has been successfully used in the assembly of VLPs [2]. Furthermore, the HaPyV VP1 protein has been exploited for generating chimeric VLPs with foreign epitopes or pseudotype VLPs when co-expressed with the minor capsid protein VP2, demonstrating its versatility in VLP production [3].

Studies have highlighted the immunogenicity of HaPyV VP1-derived VLPs, showcasing their ability to induce specific immune responses. These VLPs have been used as carriers for cytotoxic T-cell epitopes, tumor-associated epitopes, and other antigenic sequences, emphasizing their potential in vaccine development and immunotherapy [4]. Additionally, the HaPyV VP1 protein has been instrumental in the production of pseudotype VLPs displaying neutralizing antibody fragments, further underlining its significance in antibody generation [5].

References:
[1] B. Jandrig, H. Krause, W. Zimmermann, E. Vasili?nait?, A. Gedvilait?, & R. Ulrich, Hamster polyomavirus research: past, present, and future, Viruses, vol. 13, no. 5, p. 907, 2021. https://doi.org/10.3390/v13050907
[2] T. Voronkova, A. Kaz?ks, V. Ose, M. Özel, S. Scherneck, P. Pumpenset al., Hamster polyomavirus-derived virus-like particles are able to transfer in vitro encapsidated plasmid dna to mammalian cells, Virus Genes, vol. 34, no. 3, p. 303-314, 2007. https://doi.org/10.1007/s11262-006-0028-1
[3] M. Pleckaityte, C. Bremer, A. Gedvilaite, I. Kucinskaite-Kodze, D. Glebe, & A. Zvirbliene, Construction of polyomavirus-derived pseudotype virus-like particles displaying a functionally active neutralizing antibody against hepatitis b virus

surface antigen, BMC Biotechnology, vol. 15, no. 1, 2015. https://doi.org/10.1186/s12896-015-0203-3
[4] D. Dorn, R. Lawatscheck, A. Zvirbliene, E. Aleksait?, G. Pecher, K. Sasnauskaset al., Cellular and humoral immunogenicity of hamster polyomavirus-derived virus-like particles harboring a mucin 1 cytotoxic t-cell epitope, Viral Immunology, vol. 21, no. 1, p. 12-26, 2008. https://doi.org/10.1089/vim.2007.0085
[5] M. Pleckaityte, A. Zvirbliene, I. Sezaite, & A. Gedvilaite, Production in yeast of pseudotype virus-like particles harboring functionally active antibody fragments neutralizing the cytolytic activity of vaginolysin, Microbial Cell Factories, vol. 10, no. 1, 2011. https://doi.org/10.1186/1475-2859-10-109

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.