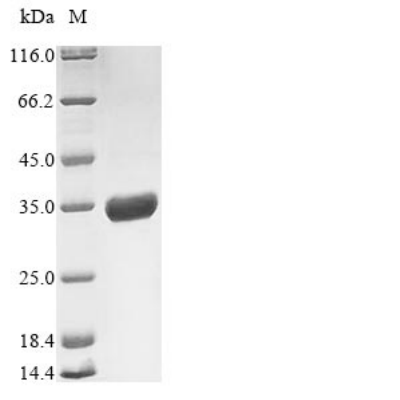
Recombinant Rotavirus A Outer capsid protein VP4, partial

Product Code	CSB-EP325504RIV
Relevance	Spike-forming protein that mediates virion attachment to the host epithelial cell receptors and plays a major role in cell penetration, determination of host range restriction and virulence. Rotavirus entry into the host cell probably involves multiple sequential contacts between the outer capsid proteins VP4 and VP7, and the cell receptors. According to the considered strain, VP4 seems to essentially target sialic acid and/or the integrin heterodimer ITGA2/ITGB1
Abbreviation	Recombinant Rotavirus A Outer capsid protein VP4 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.	P17465
Product Type	Recombinant Protein
Immunogen Species	Rotavirus A (strain RVA/Cow/United States/NCDV-Lincoln/1969/G6P6[1]) (RV-A) (Rotavirus A (strain Nebraska calf diarrhea virus))
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	AQPNQDIVVSKTSLWKEMQYNRDIVIRFKFANSIIKSGGLGYKWSEVSFKPANY QYTYTRDGEEVTAHTTCSVNGINDFNYNGGSLPTDFVISKYEVIKENSFVYIDY WDDSQAFRNMVNVRSLAADLNSVMCTGGDYSFALPVGNYPVMTGGAVSLHS AGVTLSTQFTDFVSLNSLRFRFRLSVEEPPFSILRTRVSGLYGLPAARPNNSQE YYEIAGRFSLISLVPSNDDY
Research Area	Others
Source	E.coli
Protein Names	Hemagglutinin
Expression Region	248-480aa
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	33.2 kDa
Protein Length	Partial
Image	



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

Description

Producing recombinant Rotavirus A Outer capsid protein VP4 in E. coli involves co-cloning the gene encoding the partial Rotavirus A VP4 protein (248-480aa) into an expression vector, followed by transformation into E. coli cells. These cells are cultured under conditions that induce protein expression. After sufficient growth is achieved, the cells are lysed to release the recombinant VP4 protein. Purification is achieved using affinity chromatography techniques. The purity of the Rotavirus A Outer capsid protein VP4 is confirmed using SDS-PAGE, exceeding 85%.

Rotavirus A outer capsid protein VP4 is crucial in the infectivity of rotavirus particles. Upon activation for cell entry, VP4 undergoes trypsin cleavage into hemagglutinin and a membrane penetration protein, which are essential for the virus to enter host cells [1]. The VP4 protein also exhibits hemagglutinin activity, contributing to its role in viral attachment and entry [2]. Furthermore, VP4 is a major protective antigen, although there is still limited understanding of the antigenic relationships of VP4 among different human rotavirus strains [3].

References:
[1] P. Dormitzer, H. Greenberg, & S. Harrison, Proteolysis of monomeric recombinant rotavirus vp4 yields an oligomeric vp5* core, Journal of Virology, vol. 75, no. 16, p. 7339-7350, 2001. https://doi.org/10.1128/jvi.75.16.7339-7350.2001
[2] M. Yeager, K. Dryden, N. Olson, H. Greenberg, & T. Baker, Three-dimensional structure of rhesus rotavirus by cryoelectron microscopy and image reconstruction., The Journal of Cell Biology, vol. 110, no. 6, p. 2133-2144, 1990. https://doi.org/10.1083/jcb.110.6.2133
[3] M. Gorziglia, G. Larralde, A. Kapikian, & R. Chanock, Antigenic relationships among human rotaviruses as determined by outer capsid protein vp4., Proceedings of the National Academy of Sciences, vol. 87, no. 18, p. 7155-7159, 1990. https://doi.org/10.1073/pnas.87.18.7155

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

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