

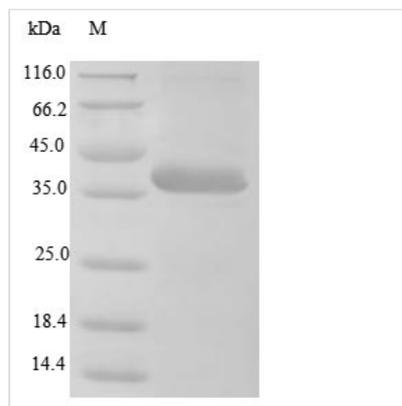


# Recombinant BK polyomavirus Minor capsid protein VP2

<b>Product Code</b>	CSB-EP360956BGYb0
<b>Relevance</b>	<p>Isoform VP2 is a structural protein that resides within the core of the capsid surrounded by 72 VP1 pentamers. Participates in host cell receptor binding together with VP1. Following virus endocytosis and trafficking to the endoplasmic reticulum, VP2 and VP3 form oligomers and integrate into the endoplasmic reticulum mbrane. Heterooligomer VP2-VP3 may create a viroporin for transporting the viral genome across the endoplasmic reticulum mbrane to the cytoplasm. Nuclear entry of the viral DNA involves the selective exposure and importin recognition of VP2 or Vp3 nuclear localization signal (shared C-terminus). Plays a role in virion assbly within the nucleus in particular through a DNA-binding domain located in the C-terminal region. A N-terminal myristoylation suggests a scaffold function for virion assbly .Isoform VP3: structural protein that resides within the core of the capsid surrounded by 72 VP1 pentamers. Following virus endocytosis and trafficking to the endoplasmic reticulum, VP2 and VP3 form oligomers and integrate into the endoplasmic reticulum mbrane. Heterooligomer VP2-VP3 may create a viroporin for transporting the viral genome across the endoplasmic reticulum mbrane to the cytoplasm. Nuclear entry of the viral DNA involves the selective exposure and importin recognition of VP2 or Vp3 nuclear localization signal (shared C-terminus). Isoform VP3 plays a role in virion assbly within the nucleus. May participate in host cell lysis when associated with VP4 .Isoform VP4 is a viroporin inducing perforation of cellular mbranes to trigger virus progeny release. Forms pores of 3 nm inner diameter. VP4 is expressed about 24 hours after the late structural proteins and is not incorporated into the mature virion .</p>
<b>Abbreviation</b>	Recombinant BK polyomavirus Minor capsid protein VP2 protein
<b>Storage</b>	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.
<b>Uniprot No.</b>	P03094
<b>Product Type</b>	Recombinant Protein
<b>Immunogen Species</b>	BK polyomavirus (BKPyV) (Human polyomavirus 1)
<b>Purity</b>	Greater than 85% as determined by SDS-PAGE.
<b>Sequence</b>	<p>GAALALLGDLVASVSEAAAATGFSVAEIAAGEAAAAIEVQIASLATVEGITSTSE  AIAAIGLTPQTYAVIAGAPGAIAGFAALIQTVSGISSLAQVGYRFFSDWDHKVST  VGLYQQSGMALELFPDEYYDILFPGVNTFVNNIQYLDPRHWGPSLFATISQAL  WHVIRDDIPSITSQELQRRTERFFRDSLARFLEETTWTIVNAPINFYNIQQYYSS  DLSPIRPSMVRQVAEREGTRVHFGHTYSIDDADSIEEVTQRMDLRNQQSVHS  GEFIEKTIAPGGANQRTAPQWMLPLLLGLYGTVTPALEAYEDGPNQKKRRVSR  GSSQKAKGTRASAKTTNKRRSRSSRS</p>



<b>Research Area</b>	Others
<b>Source</b>	E.coli
<b>Expression Region</b>	2-351aa
<b>Notes</b>	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
<b>Tag Info</b>	N-terminal 10xHis-tagged
<b>Mol. Weight</b>	41.7 kDa
<b>Protein Length</b>	Full Length of Mature Protein

**Image**


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

**Description**

Recombinant BK polyomavirus Minor capsid protein VP2 is produced in E.coli and includes the full-length mature protein from amino acids 2 to 351. The product comes with an N-terminal 10xHis-tag, which makes purification and detection more straightforward. SDS-PAGE analysis shows purity levels exceeding 85%, though this should provide adequate reliability for most research applications. This product is designed strictly for research use and cannot be used for clinical or diagnostic purposes.

The Minor capsid protein VP2 of BK polyomavirus appears to play an important role in the viral life cycle. It likely contributes to both assembly and stability of the viral capsid structure. VP2 seems to be involved in the encapsidation of viral DNA—a process that may be essential for creating infectious virions. Research into VP2 could potentially offer valuable insights into polyomavirus biology and how these viruses interact with host cells, which might advance our understanding in virology research.

**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. Viral Capsid Assembly and Structure-Function Studies**



This recombinant VP2 protein offers researchers a way to investigate the molecular mechanisms behind BK polyomavirus capsid assembly in laboratory conditions. The full-length mature protein (2-351aa) expressed in *E. coli* appears to provide a reasonable model for studying how VP2 interacts with other capsid components. Scientists can examine VP2's structural properties using methods like dynamic light scattering, electron microscopy, and cross-linking mass spectrometry. The N-terminal His-tag makes purification simpler and allows for immobilization during biophysical studies.

## 2. Antibody Development and Immunological Assays

The His-tagged VP2 protein works well as an antigen for creating both polyclonal and monoclonal antibodies that target BK polyomavirus specifically. Researchers can use the recombinant protein in immunization protocols when producing antibodies in laboratory animals. The same protein then serves as a capture antigen in ELISA-based assays for screening and characterizing these antibodies. With purity levels above 85%, the protein should generate consistent and reproducible immunological responses, though some variation between batches may still occur.

## 3. Protein-Protein Interaction Studies

VP2 protein can be used in pull-down assays to identify and study cellular proteins that might interact with the minor capsid protein during viral infection. The N-terminal His-tag allows for efficient attachment to nickel-affinity matrices, helping capture potential binding partners from cell lysates. Co-immunoprecipitation experiments and surface plasmon resonance studies can help confirm and measure these interactions more precisely. These approaches may provide insights into how viral pathogenesis works and how host cells respond to infection.

## 4. Biochemical Characterization and Enzymatic Assays

Researchers can use the recombinant VP2 protein for detailed biochemical analysis, including assessments of protein stability, folding properties, and possible enzymatic activities. Thermal stability assays, circular dichroism spectroscopy, and fluorescence-based binding studies might reveal important structural and functional characteristics of the protein. The His-tag simplifies protein purification for these analytical methods and makes it easier to determine protein concentrations for quantitative biochemical experiments.

---

### 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.