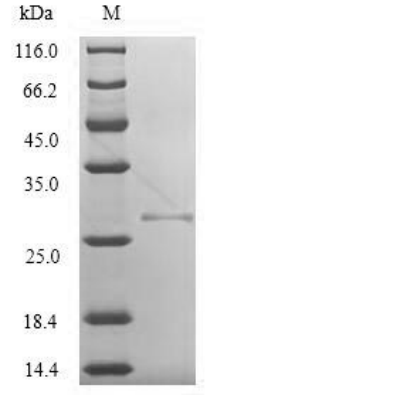
Recombinant Vaccinia virus Protein K3 (VACWR034)

Product Code	CSB-EP323585VAI
Relevance	Viral mimic of eIF-2-alpha that acts as a pseudosubstrate for EIF2AK2/PKR kinase. Inhibits therefore eIF-2-alpha phosphorylation by host EIF2AK2/PKR kinase and prevents protein synthesis shutoff.
Abbreviation	Recombinant Vaccinia virus VACWR034 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.	P18378
Alias	Protein K2
Product Type	Recombinant Protein
Immunogen Species	Vaccinia virus (strain Western Reserve) (VACV) (Vaccinia virus (strain WR))
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MLAFCYSLPNAGDVIKGRVYEKDYALYIYLFDYPHFEAILAESVKMHMDRYVEY RDKLVGKTVKVKVIRVDYTKGYIDVNYKRMCRHQ
Source	E.coli
Target Names	VACWR034
Expression Region	1-88aa
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	26.6kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Vaccinia virus Protein K3 (VACWR034) comes from E. coli expression and includes an N-terminal 6xHis-SUMO tag that makes purification and detection straightforward. The complete protein spans amino acids 1-88 and shows purity levels above 90% when checked by SDS-PAGE analysis. This research-grade material appears optimized for experimental work where keeping endotoxin contamination low matters.

Vaccinia virus Protein K3 seems to play an important role in how the virus dodges host immune defenses. K3 likely disrupts the host's protein-making machinery, which may help the virus replicate and stick around longer. This makes it an interesting target for researchers studying viruses and immune responses. Learning how K3 works could reveal new details about how viruses cause disease and might point toward better antiviral treatments.

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. Antibody Development and Immunological Studies

This recombinant K3 protein works well as an immunogen for creating antibodies that specifically recognize VACWR034. The high purity (>90%) and His-SUMO tag make it a solid choice for immunization protocols and later antibody testing. Scientists can use this protein to develop either polyclonal or monoclonal antibodies for investigating how vaccinia virus infections work. These antibodies might become useful tools for spotting native K3 protein when studying viral replication.

2. Protein-Protein Interaction Studies

The His-SUMO tag allows researchers to purify and anchor the K3 protein for pull-down experiments aimed at finding cellular partners it might bind to. This recombinant protein can act as bait in co-immunoprecipitation studies with cell extracts to map out interaction networks. The tag also makes surface plasmon resonance and other binding studies more manageable when characterizing specific protein relationships. Studies like these could shed light on exactly how vaccinia virus K3 operates during infection.

3. ELISA-Based Binding Assays

The purified K3 protein works well for setting up enzyme-linked immunosorbent assays that detect specific binding events. Coating this protein onto ELISA plates allows screening for binding partners, potential inhibitors, or testing antibody specificity and strength. High purity levels should give reliable, repeatable results in quantitative binding experiments. This approach proves particularly handy for testing compound libraries or studying immune responses

in research contexts.

4. Biochemical Characterization and Stability Studies

This recombinant protein offers a consistent reagent for exploring the biochemical traits of vaccinia virus K3, including how it handles heat, pH changes, and different buffer conditions. Scientists can apply techniques like dynamic light scattering, circular dichroism spectroscopy, or analytical ultracentrifugation to study protein folding and whether it forms complexes. The reliable production from E. coli expression means different research teams should get comparable results in their biochemical work. These characterization efforts appear essential for understanding the protein's physical properties and finding the best conditions for functional 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.