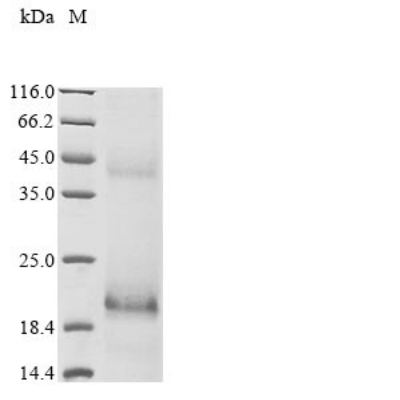
Recombinant Human papillomavirus 11 Protein E7 (E7)

Product Code	CSB-EP366089HMG
Abbreviation	Recombinant Human papillomavirus 11 E7 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.	P04020
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	Human papillomavirus type 11
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MHGRLVTLKDIVLDLQPPDPVGLHCYEQLEDSSEDEVDKVDKQDAQPLTQHY QILTCCCGCDSNVRLVVECTDGDIRQLQDLLLGTLNIVCPICAPKP
Research Area	Cancer
Source	E.coli
Target Names	E7
Expression Region	1-98aa
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	18.3 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Human papillomavirus 11 Protein E7 is expressed in E. coli and covers the complete protein sequence from amino acids 1-98. The protein carries an N-terminal 10xHis-tag and a C-terminal Myc-tag, which helps with both purification and detection processes. SDS-PAGE analysis shows the protein achieves greater than 90% purity, which appears to support reliable performance in research settings. This protein is for research use only.

HPV11 Protein E7 plays what seems to be a central role in studying how viruses interact with their host cells. E7 disrupts normal cellular control mechanisms, particularly those involved in cell cycle regulation. Its ability to alter host cell functions makes it an important research target for scientists trying to understand viral disease development and explore possible 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. In Vitro Protein-Protein Interaction Studies

This recombinant HPV11 E7 protein works well for investigating how it interacts with cellular targets through pull-down assays that take advantage of the N-terminal 10xHis tag. Having both His and Myc tags gives researchers flexibility in detection and purification approaches during biochemical experiments. Scientists can use this protein to examine E7's binding partners in cell lysates or when working with purified cellular proteins. The high purity level (>90%) likely reduces interference from bacterial contaminants, though some background may still be present in sensitive assays.

2. Antibody Development and Validation

The recombinant E7 protein appears to be well-suited as an antigen for creating monoclonal or polyclonal antibodies that specifically recognize HPV11 E7. The C-terminal Myc tag offers a built-in control for protein detection and can help validate antibody specificity through competitive binding experiments. Since this

represents the full-length protein (1-98aa), it should preserve the natural epitopes that may be essential for developing antibodies with proper specificity and binding strength. Bacterial expression provides a relatively inexpensive antigen source for immunization studies, though researchers should consider that bacterial folding might not perfectly mimic native protein structure.

3. Biochemical Characterization and Structural Studies

The dual-tagged E7 protein can be used for comprehensive biochemical analysis, including protein stability tests, folding studies, and various biophysical measurements. The N-terminal His tag makes purification straightforward for analytical techniques like mass spectrometry, circular dichroism spectroscopy, or dynamic light scattering. Scientists can test how the protein behaves under different buffer conditions and pH levels to find optimal experimental conditions. While the high purity level makes this protein appropriate for quantitative biochemical work, some caution may be needed when interpreting results since bacterial expression systems don't always produce proteins with native post-translational modifications.

4. ELISA-Based Detection Assay Development

The recombinant HPV11 E7 protein can function as either a capture antigen or standard in enzyme-linked immunosorbent assays for research purposes. The Myc tag makes sandwich ELISA formats possible using anti-Myc antibodies for detection, while the His tag allows for oriented attachment to nickel-coated surfaces. This protein helps in developing and refining ELISA protocols for measuring E7-specific immune responses in preclinical vaccine research. The known concentration and high purity should support consistent assay performance, though optimization may still be needed for different experimental conditions.

5. Cell-Free Functional Assays

This recombinant E7 protein works in cell-free biochemical assays designed to study its molecular characteristics and potential enzymatic activities. The protein can be tested in binding experiments with nucleic acids or other cellular components to explore E7's molecular mechanisms. The dual tagging system makes it easier to track and measure the protein in complex reaction mixtures. Researchers can use this protein in side-by-side comparisons with E7 proteins from other HPV types to identify type-specific differences in biochemical behavior, though such comparisons may be limited by expression system variations.

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.