

# Recombinant Rotavirus A VP6 Protein

**Cat. No.** VP6-10R    **Lot. No.** (See product label)

## SPECIFICATION

**Product Overview**      Recombinant Rotavirus A VP6 Protein without tag tag was expressed in HEK293.

**Species**                      Rotavirus A

**Source**                        HEK293

### Description

Rotaviruses are non-enveloped viruses of the Reoviridae family that feature a capsid composed of structural proteins (VP1-VP4 and VP6-VP7) as well as non-structural proteins (NSP1-NSP5/6). VP6 is used for classifying the RV type, and based on its serological cross-reactivity and genetic variability, ten groups (RVA-RVJ) have been established as well as four subgroups (SGI, II, I+II, and non-I, non-II). Of these, group A rotavirus (RVA) is the leading cause of acute gastroenteritis in children under five. VP6 protein is highly abundant, conserved, antigenic, and immunogenic. Functionally, VP6 is the structural protein that forms the middle capsid layer that surrounds the core shell of RV. It assembles as 260 trimers with a T=13 icosahedral lattice and has the ability to interact with itself, VP2, VP4, and VP7. Assembly of trimeric VP6 occurs spontaneously, and oligomer formation is an intrinsic property of the protein. VP6 produced by in vitro expression systems form trimers ordered into hexagons, and can form nanospheres, nanotubes, and sheets depending on pH and ionic strength. VP6 protein has been identified as a new generation RV vaccine candidate. VP6 DNA vaccines, VP6 proteins, and self-assembled VP6 all induce a response and/or protection in mice challenged with RV. VP6 is also the basis of a rapid nanobody-based ELISA able to identify RVA in feces from pediatric patients.

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|                       |                                                                                                                                                                                                  |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tag</b>            | Non                                                                                                                                                                                              |
| <b>Form</b>           | Lyophilized                                                                                                                                                                                      |
| <b>Molecular Mass</b> | ~66 kDa                                                                                                                                                                                          |
| <b>AA Sequence</b>    | RTGFTFHKPNIFPYSASFTLNRSQPAHDNLMGTMWLNAGSEIQVAGFDYSCAINAPANIQQFEHIVQLRRVLTTATITLLPDAERFSFPRVINSADGAaTWYFNPVILRPNNVEVEFLLNGQIINTYQARFGTIIARNFDTIRLSFQLMRPPNMTPAVAALFPNAQPFHHATVGLTLRIESAVCESVLADAS |
| <b>Applications</b>   | ELISA; Lateral Flow; WB                                                                                                                                                                          |
| <b>Storage</b>        | 1 month, 2 to 8 centigrade under sterile conditions after opening.<br>1 year from date of receipt, -20 to -80 centigrade sterile conditions after opening.<br>Avoid Repeated Freeze Thaw Cycles. |
| <b>Reconstitution</b> | Reconstitute at 0.1-1 mg/mL using filtered deionized water. Gently mix by vortexing and/or inversion until fully dissolved. Centrifuge if necessary.                                             |
| <b>Shipping</b>       | Frozen Dry Ice                                                                                                                                                                                   |
| <b>Reference</b>      | 1. Afchangi A, Jalilvand S, Mohajel N, et al. Rev Med Virol. 29(2):e2027. 2019.<br>2. Vega CG, Garaicoechea LL, Degiuseppe JI, et al. J Virol Methods. 298:114279. 2021.                         |

## GENE INFORMATION

|                        |                                |
|------------------------|--------------------------------|
| <b>Gene Name</b>       | LOC7011372 VP6 [ Rotavirus A ] |
| <b>Official Symbol</b> | VP6                            |

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|                |                 |
|----------------|-----------------|
| Synonyms       | LOC7011372; VP6 |
| Gene ID        | 7011372         |
| Protein Refseq | YP_002302229    |
| UniProt ID     | B2BN53          |

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