

# PRODUCT INFORMATION



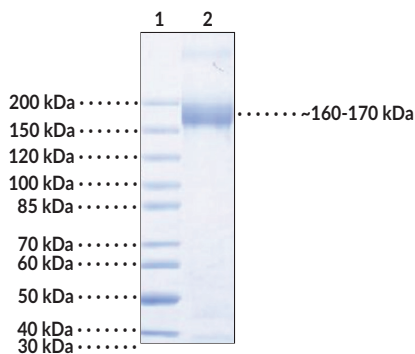
## HCMV Glycoprotein B (R457T, K459Q, R460T mutant; recombinant) Item No. 43752

### Overview and Properties

|                           |  |
|---------------------------|--|
| <b>Synonyms:</b>          | CMV gB, HCMV Envelope Glycoprotein B, Human Cytomegalovirus Glycoprotein B, Human Herpesvirus 5 Glycoprotein B |
| <b>Source:</b>            | Active recombinant C-terminal human IgG1 Fc-tagged HCMV glycoprotein B expressed in HEK293 cells               |
| <b>Amino Acids:</b>       | 25-700; 777-907  |
| <b>Uniprot No.:</b>       | P13201   |
| <b>Molecular Weight:</b>  | 118 kDa  |
| <b>Storage:</b>           | -80°C (as supplied)  |
| <b>Stability:</b>         | ≥1 year  |
| <b>Purity:</b>            | ≥80% estimated by SDS-PAGE   |
| <b>Supplied in:</b>       | Lyophilized from sterile 100 mM glycine, 10 mM sodium chloride, 50 mM Tris, and pH 7.5                         |
| <b>Endotoxin Testing:</b> | <1.0 EU/μg, determined by the LAL endotoxin assay  |

*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Image



Lane 1: MW Markers  
Lane 2: HCMV Glycoprotein B

**SDS-PAGE Analysis of HCMV Glycoprotein B.** This protein has a calculated molecular weight of 118 kDa. It has an apparent molecular weight of approximately 160-170 kDa under reducing conditions due to glycosylation.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## Description

Human cytomegalovirus (HCMV) is a large, enveloped dsDNA virus and member of the Betaherpesvirinae subfamily.<sup>1,2</sup> HCMV infection in immunocompetent individuals is asymptomatic or causes mild flu-like symptoms but can lead to severe complications in immunocompromised individuals.<sup>2</sup> HCMV infection is also a leading cause of viral congenital birth defects.<sup>1</sup> HCMV glycoprotein B (gB) is a heavily glycosylated type I envelope protein encoded by HCMV open reading frame UL55.<sup>3</sup> It is composed of a large ectodomain, a hydrophobic membrane proximal region (MRP), a transmembrane domain, and an intraviral C-terminal domain.<sup>4</sup> The full-length HCMV gB precursor protein contains a furin cleavage site at the arginine in position 460, where cleavage results in two polypeptides that stay linked by disulfide bonds.<sup>1</sup> It forms a complex with gN on the virion surface and tethers the host cell by interacting with heparan sulfate proteoglycans.<sup>1,3</sup> HCMV gB is involved in membrane fusion and host cell entry *via* complex interactions with a variety of host cell receptors on multiple cell types and is also involved in cell-to-cell spread.<sup>1,3,5</sup> It contains several antigenic domains, of which two have been identified as the primary HCMV gB targets for neutralizing antibodies.<sup>4,6</sup> Cayman's HCMV Glycoprotein B (R457T, K459Q, R460T mutant; recombinant) protein can be used for binding assays. This protein is a disulfide-linked homodimer that contains furin cleavage site mutations. The reduced monomer, composed of HCMV glycoprotein B (amino acids 25-700; 777-907) fused to human IgG1 Fc at its C-terminus, consists of 1,045 amino acids, has a calculated molecular weight of 118 kDa, and a predicted N-terminus of Asn25 after signal peptide cleavage. As a result of glycosylation, the monomer migrates at approximately 160-170 kDa by SDS-PAGE under reducing conditions.

## References

1. Shang, Z. and Li, X. Human cytomegalovirus: Pathogenesis, prevention, and treatment. *Mol. Biomed.* **5(1)**, 61 (2024).
2. Burke, H.G. and Heldwein, E.E. Crystal structure of the human cytomegalovirus glycoprotein B. *PLoS Pathog.* **11(10)**, e1005227 (2015).
3. Gardner, T.J. and Tortorella, D. Virion glycoprotein-mediated immune evasion by human cytomegalovirus: A sticky virus makes a slick getaway. *Microbiol. Mol. Biol. Rev.* **80(3)**, 663-677 (2016).
4. Reuter, N., Kropff, B., Chen, X., *et al.* The autonomous fusion activity of human cytomegalovirus glycoprotein B is regulated by its carboxy-terminal domain. *Viruses* **16(9)**, 1482 (2024).
5. Isaacson, M.K. and Compton, T. Human cytomegalovirus glycoprotein B is required for virus entry and cell-to-cell spread but not for virion attachment, assembly, or egress. *J. Virol.* **83(8)**, 3891-3903 (2009).
6. Pöttsch, S., Spindler, N., Wiegers, A.K., *et al.* B cell repertoire analysis identifies new antigenic domains on glycoprotein B of human cytomegalovirus which are target of neutralizing antibodies. *PLoS Pathog.* **7(8)**, e1002172 (2011).

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