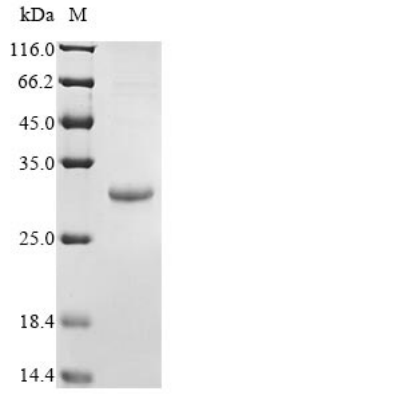
Recombinant Epstein-Barr virus Secreted protein BARF1 (BARF1)

Product Code	CSB-EP317825EFC
Abbreviation	Recombinant Epstein-Barr virus BARF1 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.	P0CW72
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	Epstein-Barr virus (strain GD1) (HHV-4) (Human herpesvirus 4)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	VTAFLGERVTLTSYWRRVSLGPEIEVSWFKLGPGEEQVLIGRMHHDVIFIEWPF RGFFDIHRSANTFFLVVTAANISHDGNYLCRMKLGETEVTKQEHLSVVKPLTLS VHSERSQFPDFSVLTVTCTVNAFPHPHVQWLMPEGVEPAPTAANGGVMKEK DGSLSVAVDLSLPKPWHLPVTCVGKNDKEEAHGVYVSGYLSQ
Research Area	Cancer
Source	E.coli
Target Names	BARF1
Expression Region	21-221aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	28.4 kDa
Protein Length	Full Length of Mature Protein
Image	



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

Description

The process of synthesizing recombinant Epstein-Barr virus Secreted protein BARF1 begins with isolating the target gene. This gene encoding the HHV-4 BARF1 (21-221aa) is fused with an N-terminal 6xHis-tag gene and then cloned into an expression vector, which is transformed into E. coli cells. The positive E. coli cells express the recombinant BARF1 protein in the culture medium and are lysed to release these proteins. The collected protein is purified using affinity chromatography. Its purity is greater than 90% as determined by SDS-PAGE.

Epstein-Barr virus (EBV) secreted protein BARF1 is a viral oncoprotein crucial for EBV-associated malignancies. BARF1 has pleiotropic functions, contributing to cell growth, survival, and immune modulation [1]. It is selectively expressed in latently infected epithelial cancers such as nasopharyngeal carcinoma (NPC) and EBV-positive gastric cancer (EBV-GC) [2]. Despite being an early lytic gene, BARF1 is expressed during epithelial EBV latency, mainly as a secreted protein [3]. BARF1 functions by up-regulating anti-apoptotic Bcl-2 and stimulating host cell growth and survival [4]. BARF1 neutralizes hematopoietic colony-stimulating factor 1 (hCSF-1) to achieve immunomodulation [5]. It has been identified as a decoy receptor for macrophage colony-stimulating factors, interfering with macrophage differentiation and activation [6].

References:
[1] E. Hoebe, T. Large, A. Greijer, & J. Middeldorp, Bamhi?a rightward frame 1, an epstein–barr virus?encoded oncogene and immune modulator, Reviews in Medical Virology, vol. 23, no. 6, p. 367-383, 2013. https://doi.org/10.1002/rmv.1758
[2] A. Lo, C. Dawson, H. Lung, K. Wong, & Y. Lw, The therapeutic potential of targeting barf1 in ebv-associated malignancies, Cancers, vol. 12, no. 7, p. 1940, 2020. https://doi.org/10.3390/cancers12071940
[3] R. Blanco and F. Aguayo, Role of bamhi-a rightward frame 1 in epstein–barr virus-associated epithelial malignancies, Biology, vol. 9, no. 12, p. 461, 2020. https://doi.org/10.3390/biology9120461
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[5] J. Elegheert, N. Bracke, P. Pouliot, I. Gutsche, A. Shkumatov, N.

Tarbouriechet al., Allosteric competitive inactivation of hematopoietic csf-1 signaling by the viral decoy receptor barf1, Nature Structural & Molecular Biology, vol. 19, no. 9, p. 938-947, 2012. https://doi.org/10.1038/nsmb.2367
[6] E. Hoebe, T. Large, N. Tarbouriech, D. Oosterhoff, T. Gruijl, J. Middeldorpet al., Epstein-barr virus-encoded barf1 protein is a decoy receptor for macrophage colony stimulating factor and interferes with macrophage differentiation and activation, Viral Immunology, vol. 25, no. 6, p. 461-470, 2012. https://doi.org/10.1089/vim.2012.0034

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.