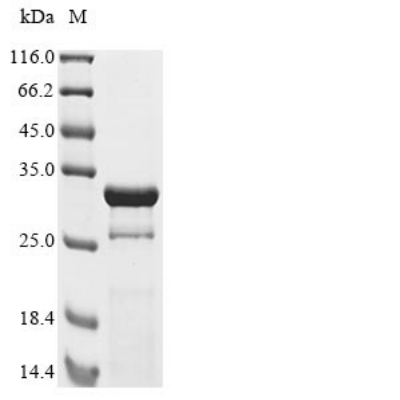
Recombinant Human adenovirus B serotype 3 Hexon protein (L3), partial

Product Code	CSB-EP334192HIG
Abbreviation	Recombinant Human adenovirus B serotype 3 Hexon protein, partial
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.	P36849
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 adenovirus B serotype 3 (HAdV-3) (Human adenovirus 3)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MLRNDTNDQSFNDYLSAANMLYPIPANATNIPISIPSRNWAAFRGWSFTRLKTK ETPSLGSGFDPYFVYSGSIPYLDGTFYLNHTFKKVAIMFDSSVSWPGNDRLLS PNEFEIKRTVDGEGYNVAQCNMTKDWFLVQMLANYNIGYQGFYIPEGYKDRM YSFFRNFQPMSRQVVDEVNYTDYKAVTLPYQHNNSGFVGYLAPTMRQGEPY PANYPYPLIGTTAVKSVTQ
Research Area	Microbiology
Source	E.coli
Target Names	L3
Expression Region	625-853aa
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	33.7 kDa
Protein Length	Partial
Image	



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

Description

Constructing a plasmid that codes for the human adenovirus B serotype 3 (HAdV-3) Hexon protein (L3) (625-853aa) along with the N-terminal 10xHis-tag gene and C-terminal Myc-tag gene is the initial step to yield the recombinant HAdV-3 Hexon protein. The plasmid is then transferred into E.coli cells. Positive E.coli cells are selected and cultured for protein expression. CUSABIO uses affinity chromatography to purify the protein. The SDS-PAGE analysis is carried out to verify the presence and assess the purity of the protein. The protein possesses a purity exceeding 85%.

Hexon protein is a vital component of adenoviruses, serving as one of the major capsid proteins associated with different viral species or serotypes [1]. It is the most abundant capsid protein, with 240 hexon capsomers, each consisting of a trimer of hexon proteins [2]. Hexon forms a total of 240 trimers on the surface of the icosahedral capsid, making it the most abundant viral capsid protein [3]. The hexon capsomer is an oligomeric protein with three subunits, and its structure and function are influenced by genetic material from specific regions of the viral genome [4]. Furthermore, hexon plays a significant role in the natural liver tropism of adenoviruses [5].

Hexon proteins are essential for inducing the formation of group-specific antibodies and contain major serotype-specific B cell epitopes [6][7]. They are type-specific, and replacing one type of adenovirus hexon with another can alter the neutralizing antigenic properties [8]. The hexon protein is structurally complex, with multiple hypervariable regions containing serotype-specific residues [9]. It is also involved in interactions with scavenger receptors Khare et al. [5] and is crucial for adenovirus assembly, with its nuclear import mediated by protein VI [10].

References:
[1] J. Liu, N. Mei, Y. Wang, X. Shi, & H. Chen, Identification of a novel immunological epitope on hexon of fowl adenovirus serotype 4, Amb Express, vol. 11, no. 1, 2021. https://doi.org/10.1186/s13568-021-01309-2
[2] G. Singh, X. Zhou, Y. Lee, M. Yousuf, M. Ramke, A. Ismailet al., Recombination of the epsilon determinant and corneal tropism: human adenovirus species d types 15, 29, 56, and 69, Virology, vol. 485, p. 452-459, 2015. https://doi.org/10.1016/j.virol.2015.08.018
[3] D. Zhou, T. Wu, K. Emmer, R. Kurupati, S. Tuyishime, Y. Liet al., Hexon-modified recombinant e1-deleted adenovirus vectors as dual specificity vaccine

carriers for influenza virus, Molecular Therapy, vol. 21, no. 3, p. 696-706, 2013. https://doi.org/10.1038/mt.2012.248
[4] R. Kauffman and H. Ginsberg, Characterization of a temperature-sensitive, hexon transport mutant of type 5 adenovirus, Journal of Virology, vol. 19, no. 2, p. 643-658, 1976. https://doi.org/10.1128/jvi.19.2.643-658.1976
[5] R. Khare, V. Reddy, G. Nemerow, & M. Barry, Identification of adenovirus serotype 5 hexon regions that interact with scavenger receptors, Journal of Virology, vol. 86, no. 4, p. 2293-2301, 2012. https://doi.org/10.1128/jvi.05760-11
[6] K. Mukantayev, K. Tursunov, D. Kanayev, L. Tokhtarova, Y. Ramankulov, & K. Mukanov, Obtaining strain-producer of recombinant hexon of bovine adenovirus type 3, Eurasian Journal of Applied Biotechnology, no. 1, 2019. https://doi.org/10.11134/btp.1.2019.9
[7] X. Yuan, Y. Wang, W. Jin, B. Zhao, C. Chen, J. Yanget al., Structure-based high-throughput epitope analysis of hexon proteins in b and c species human adenoviruses (hadvs), Plos One, vol. 7, no. 3, p. e32938, 2012. https://doi.org/10.1371/journal.pone.0032938
[8] Y. Wang, Z. Zhang, L. Shang, H. Gao, X. Du, F. Liet al., Immunological study of reconstructed common ancestral sequence of adenovirus hexon protein, Frontiers in Microbiology, vol. 12, 2021. https://doi.org/10.3389/fmicb.2021.717047
[9] L. Crawford-Miksza and D. Schnurr, Analysis of 15 adenovirus hexon proteins reveals the location and structure of seven hypervariable regions containing serotype-specific residues, Journal of Virology, vol. 70, no. 3, p. 1836-1844, 1996. https://doi.org/10.1128/jvi.70.3.1836-1844.1996
[10] H. Wodrich, T. Guan, G. Cingolani, D. Seggern, G. Nemerow, & L. Gerace, Switch from capsid protein import to adenovirus assembly by cleavage of nuclear transport signals, The Embo Journal, vol. 22, no. 23, p. 6245-6255, 2003. https://doi.org/10.1093/emboj/cdg614

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.