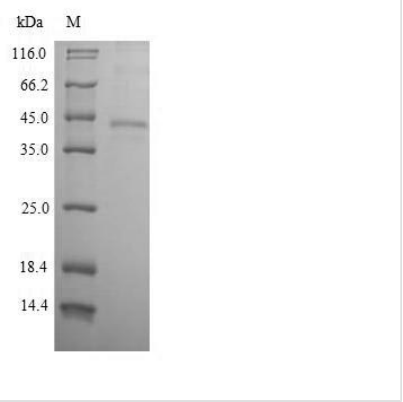
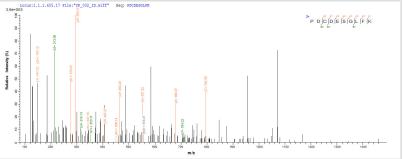
Recombinant Human Epithelial cell adhesion molecule (EPCAM), partial

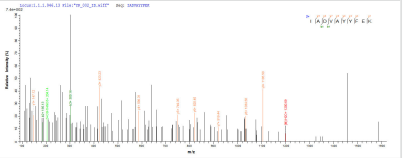
Product Code	CSB-EP007717HU
Relevance	May act as a physical homophilic interaction molecule between intestinal epithelial cells (IECs) and intraepithelial lymphocytes (IELs) at the mucosal epithelium for providing immunological barrier as a first line of defense against mucosal infection. Plays a role in embryonic stem cells proliferation and differentiation. Up-regulates the expression of FABP5, MYC and cyclins A and E.
Abbreviation	Recombinant Human EPCAM 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.	P16422
Product Type	Recombinant Proteins
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	QEECVCENYKLAVNCFVNNNRQCQCTSVGAQNTVICSKLAAKCLVMKAEMN GSKLGRRAKPEGALQNNDGLYDPDCDESGLFKAKQCNGTSMCWCVNTAGV RRTDKDTEITCSERVRTYWIIIELKHKAREKPYDSKSLRTALQKEITTRYQLDPK FITSILYENNVITIDLVQNSSQKTQNDVDIADVAYYFEKDVKGESLFHSKKMDLT VNGEQLDLDPGQTLIYYVDEKAPEFSMQGLK
Research Area	Tags & Cell Markers
Source	E.coli
Target Names	EPCAM
Expression Region	24-265aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	43.4kDa
Protein Length	Partial
Image	



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



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP007717HU could indicate that this peptide derived from E.coli-expressed Homo sapiens (Human) EPCAM.



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Description

The recombinant human EPCAM protein tagged with an N-terminal 6xHis-SUMO is produced by cloning the EPCAM gene fragment (24-265aa) into an expression vector designed for E. coli systems. The N-terminal 6xHis-SUMO tag gene is also inserted into the vector. This recombinant vector is then introduced into E. coli and protein expression is induced using IPTG. Once expressed, the cells are lysed, and the EPCAM protein is captured using affinity chromatography. The purity of the recombinant EPCAM protein is assessed using SDS-PAGE, which confirms a high degree of purity, greater than 90%, making the protein ideal for experimental use.

The Human EPCAM, also known as CD326, is a type I transmembrane glycoprotein that plays a crucial role in cell adhesion, signaling, and various cellular processes such as proliferation and differentiation. It is primarily expressed in epithelial tissues and is particularly noted for its overexpression in various carcinomas, making it a significant marker in cancer research and therapy [1][2].

EPCAM is characterized by a large extracellular domain, a single transmembrane domain, and a short cytoplasmic domain. Beyond mere adhesion, EPCAM is also involved in intracellular signaling pathways that can influence cell behavior, including migration and differentiation [2][3].

EPCAM is often overexpressed in tumor cells compared to normal epithelial cells. Therapies targeting EPCAM have been developed to enhance the immune response against tumors expressing this molecule [4][5]. Additionally, its expression is associated with poor prognosis in various cancers, including

breast and ovarian cancers, highlighting its potential as a biomarker for disease progression [1][3][6].

References:
[1] R. Ohashi, K. Kawahara, T. Fujii, H. Takei, & Z. Naito, Higher expression of epcam is associated with poor clinical and pathological responses in breast cancer patients undergoing neoadjuvant chemotherapy, Pathology International, vol. 66, no. 4, p. 210-217, 2016. https://doi.org/10.1111/pin.12404
[2] G. Carpenter and M. Brewer, Epcam: another surface-to-nucleus missile, Cancer Cell, vol. 15, no. 3, p. 165-166, 2009. https://doi.org/10.1016/j.ccr.2009.02.005
[3] M. Lee, Prognostic impact of epithelial cell adhesion molecule in ovarian cancer patients, Journal of Gynecologic Oncology, vol. 25, no. 4, p. 352, 2014. https://doi.org/10.3802/jgo.2014.25.4.352
[4] F. Suurs, G. Lorenczewski, S. Stienen, M. Friedrich, E. Vries, D. Groot, et al. The biodistribution of a cd3 and epcam bispecific t-cell engager is driven by the cd3 arm, Journal of Nuclear Medicine, vol. 61, no. 11, p. 1594-1601, 2020. https://doi.org/10.2967/jnumed.120.241877
[5] X. Zheng, X. Fan, B. Fu, M. Zheng, A. Zhang, K. Zhong, et al. Epcam inhibition sensitizes chemoresistant leukemia to immune surveillance, Cancer Research, vol. 77, no. 2, p. 482-493, 2017. https://doi.org/10.1158/0008-5472.can-16-0842
[6] S. Bellone, E. Siegel, E. Cocco, M. Cargnelutti, D. Silasi, M. Azodi, et al. Overexpression of epithelial cell adhesion molecule in primary, metastatic, and recurrent/chemotherapy-resistant epithelial ovarian cancer, International Journal of Gynecological Cancer, vol. 19, no. 5, p. 860-866, 2009. https://doi.org/10.1111/igc.0b013e3181a8331f

Shelf Life

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