

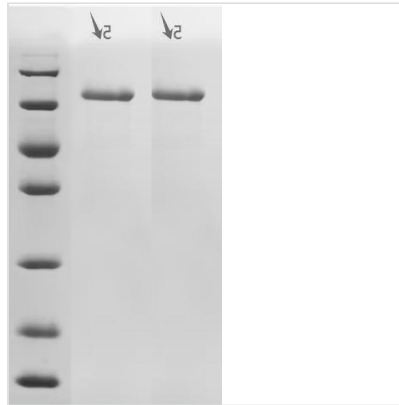


Recombinant Human Cadherin-1(CDH1),partial (Active)

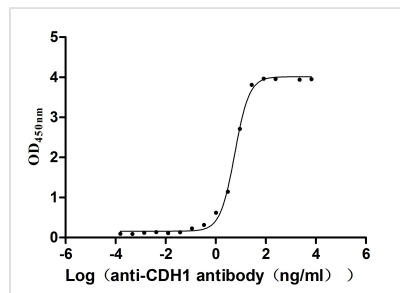
Product Code	CSB-MP005034HU1
Abbreviation	Recombinant Human CDH1 protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P12830
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 µm sterile filtered 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0;Lyophilized from a 0.2 µm filtered PBS, 6% Trehalose, pH 7.4
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized Human CDH1 at 2 µg/mL can bind Anti-CDH1 recombinant antibody(CSB-RA005034MA2HU). The EC50 is 5.151-6.358 ng/mL.
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	DWVIPPISCPENEKGPFKPNLVQIKSNKDKEGKVFYSITGQGADTPPVGVFIER ETGWLKVTEPLDRERIATYTLFSHAVSSNGNAVEDPMEILITVTDQNDNKPEFT QEVFKGSVMEGALPGTSVMEVTATDADDDVNTYNAAIAYTILSQDPELPDKNM FTINRNTGVISVVTGLDRESFPTYTLVVQAADLQGEGLSTTATAVITVTDNDN PPIFNPTTYKGQVPENEANVVITTLKVTADAPNTPAWEAVYTILNDDGGQFVV TTNPVNNDGILKTAKGLDFEAKQQYILHVAVTNNVPFEVSLTTSTATVTVDVLD VNEAPIFVPPEKRVEVSEDFGVGQEITSYTAQEPDTFMEQKITYRIWRDTANW LEINPDTGAISTRAELDREDFEHVKNSTYTALIIATDNGSPVATGTGTLILLSDV NDNAPIPEPRTIFFCERNPKPQVINIIDADLPNTSPFTAELTHGASANWTIQYN DPTQESIILKPKMALEVGDYKINLKLMDNQNKDQVTTLEVSVCDCEGAAGVCR KAQPVEAGLQIPA
Source	Mammalian cell
Target Names	CDH1
Expression Region	155-709aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4? for up to one week.
Tag Info	C-terminal 10xHis-tagged
Mol. Weight	61.9 kDa
Protein Length	Partial



Image



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



Activity

Measured by its binding ability in a functional ELISA. Immobilized Human CDH1 at 2 μ g/mL can bind Anti-CDH1 recombinant antibody(CSB-RA005034MA2HU)?the EC₅₀ is 5.151-6.358 ng/mL.

Description

The recombinant human CDH1 protein is a mammalian cell-expressed biologics product encompassing amino acid residues 155-709 of the native human cadherin-1 protein. It is engineered with a C-terminal 10xHis affinity tag to facilitate purification processes. This lyophilized preparation demonstrates a purity exceeding 90% through SDS-PAGE quality control and meets stringent endotoxin specifications of <1.0 endotoxin unit per microgram (EU/ μ g) as validated by LAL testing. Functional analysis via immobilized ligand interaction assays reveals its specific binding capacity to the anti-CDH1 recombinant antibody (CSB-RA005034MA2HU), demonstrating the EC₅₀ between 5.151 and 6.358 ng/mL when coated at 2 μ g/mL in ELISA platforms. The mammalian expression system ensures proper post-translational modifications critical for maintaining structural integrity, while the extended histidine tag enhances purification efficiency without compromising functional domains. These characteristics position this recombinant CDH1 protein as a vital reagent for cadherin-mediated adhesion studies, epithelial-mesenchymal transition research, and therapeutic antibody development requiring physiologically relevant protein conformations.

The human CDH1 protein is a calcium-dependent cell adhesion molecule critical for maintaining the integrity of epithelial tissues. CDH1 is located on chromosome 16q22.1 and plays a vital role in cellular adhesion, polarity, and tissue morphology [1][2]. Mutations in the CDH1 gene can lead to various developmental disorders and predispose individuals to certain cancers, most notably hereditary diffuse gastric cancer (HDGC) [3][4].

CDH1 is instrumental in forming adherens junctions between cells, impacting processes like cell signaling and migration. Its functional loss has been



associated with increased tumor migration and invasiveness [2][5]. Specifically, the downregulation or mutation of CDH1 can initiate epithelial-mesenchymal transition (EMT), a critical step in cancer metastasis [6]. Notably, variants like rs9929218, located in an intron of the CDH1 gene, have been linked to the modulation of E-cadherin expression across various human tissues, illustrating the gene's broader impact on cellular behavior [2].

Moreover, the involvement of CDH1 in cancer is underscored by its role in familial cancer syndromes, where germline mutations lead to significant cancer susceptibility. Approximately 40% of families with clinical criteria for HDGC harbor such mutations, highlighting the gene's clinical significance [4]. Furthermore, studies have identified somatic mutations in CDH1 as crucial contributors to the pathogenesis of various types of neoplasms, including gastric, breast, and colorectal cancers [4][5].

The stability and expression of CDH1 are meticulously regulated. Alterations can lead to reduced protein abundance, influenced by post-transcriptional mechanisms such as microRNA-mediated silencing, underscoring its importance in maintaining cellular homeostasis [6].

References:

- [1] Y. Peng, S. Li, et al. Prenatal whole exome sequencing reveals a novel cdh1 mutation associated with blepharo-cheilo-dontic syndrome. 2020. <https://doi.org/10.21203/rs.3.rs-135776/v1>
- [2] N. Song, K. Kim, et al. Colorectal cancer susceptibility loci and influence on survival. *Genes Chromosomes and Cancer*, vol. 57, no. 12, p. 630-637, 2018. <https://doi.org/10.1002/gcc.22674>
- [3] H. Yamada, K. Shinmura, et al. Germline alterations in the cdh1 gene in familial gastric cancer in the japanese population. *Cancer Science*, vol. 102, no. 10, p. 1782-1788, 2011. <https://doi.org/10.1111/j.1349-7006.2011.02038.x>
- [4] J. Figueiredo, S. Melo, et al. Clinical spectrum and pleiotropic nature of cdh1 germline mutations. *Journal of Medical Genetics*, vol. 56, no. 4, p. 199-208, 2019. <https://doi.org/10.1136/jmedgenet-2018-105807>
- [5] A. Bustos-Carpinteyro, C. Oliveíra, et al. Cdh1 somatic alterations in mexican patients with diffuse and mixed sporadic gastric cancer. *BMC Cancer*, vol. 19, no. 1, 2019. <https://doi.org/10.1186/s12885-019-5294-0>
- [6] JD. Ewerth, A. Schmidts, et al. Suppression of apc/ccdh1 has subtype specific biological effects in acute myeloid leukemia. *Oncotarget*, vol. 7, no. 30, p. 48220-48230, 2016. <https://doi.org/10.18632/oncotarget.10196>

Endotoxin	Less than 1.0 EU/ug as determined by LAL method.
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°/-80°. 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.