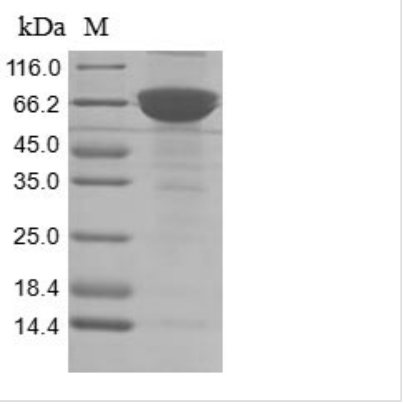
Recombinant Human ADP-ribosyl cyclase/cyclic ADP-ribose hydrolase 1 (CD38), partial

Product Code	CSB-MP004929HU1
Abbreviation	Recombinant Human CD38 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.	P28907
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	VPRWRQQWSGPGTTKRFPETVLARCVKYTEIHPEMRHVDCQSVWDAFKGAF ISKHPCNITEEDYQPLMKLGTQTVPCNKILLWSRIKDLAHQFTQVQRDMFTLED TLLGYLADDLTWCGEFNTSKINYQSCPDWRKDCSNNPVSVFWKTVSRRFAEA ACDVVHVMLNGSRSKIFDKNSTFGSVEVHNLQPEKVQTLEAWVIHGGREDSR DLCQDPTIKELESIISKRNIQFSCKNIYRPDKFLQCVKNPEDSSCTSEI
Research Area	Cancer
Source	Mammalian cell
Target Names	CD38
Protein Names	Recommended name: ADP-ribosyl cyclase 1 EC= 3.2.2.5Alternative name(s): Cyclic ADP-ribose hydrolase 1 Short name= cADPr hydrolase 1 T10 CD_antigen= CD38
Expression Region	43-300aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal hFc1-tagged
Mol. Weight	57.4 kDa
Protein Length	Extracellular Domain
Image	



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

Description

Recombinant human ADP-ribosyl cyclase/cyclic ADP-ribose hydrolase 1 (CD38) production in mammalian cells involves co-cloning the gene encoding the extracellular domain of the human CD38 protein (43-300aa) into an expression vector with a C-terminal hFc-tag gene, followed by transformation into mammalian cells. The cells are cultured under conditions that induce protein expression. After sufficient growth, the cells are lysed to release the recombinant protein. Purification is achieved using affinity chromatography technique. The purity of the CD38 protein is confirmed using SDS-PAGE, reaching over 85%.

Human CD38 protein is a transmembrane glycoprotein that stimulates B-lymphocyte activation and acts as an enzyme that catalyzes the synthesis of cyclic ADP-ribose from NAD+ [1]. It is a part of the ADP ribosyl cyclase/CD38 gene family and is evolutionarily conserved, indicating its importance in human physiology [2]. CD38 functions as an ectoenzyme and a receptor, degrading NAD and modulating cellular NAD homeostasis [3]. Furthermore, CD38 is involved in oxytocin secretion, social behavior, and calcium regulation [4][5]. It is expressed in inflammatory conditions and is robustly induced in human macrophages under inflammatory stimuli [6]. CD38 is also implicated in diseases like cancer, where it is methylated in prostate cancer and regulates extracellular NAD+ [7].

References:
[1] M. Dong, Y. Qi, S. Sun, X. Pu, Z. Yang, L. Zhanget al., Design, synthesis and biological characterization of novel inhibitors of cd38, Organic & Biomolecular Chemistry, vol. 9, no. 9, p. 3246, 2011. https://doi.org/10.1039/c0ob00768d
[2] F. Malavasi, S. Deaglio, A. Funaro, E. Ferrero, A. Horenstein, E. Ortolanet al., Evolution and function of the adp ribosyl cyclase/cd38 gene family in physiology and pathology, Physiological Reviews, vol. 88, no. 3, p. 841-886, 2008. https://doi.org/10.1152/physrev.00035.2007
[3] E. Chini, C. Chini, J. Netto, G. Oliveira, & W. Schooten, The pharmacology of cd38/nadase: an emerging target in cancer and diseases of aging, Trends in Pharmacological Sciences, vol. 39, no. 4, p. 424-436, 2018. https://doi.org/10.1016/j.tips.2018.02.001
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[7] J. Mottahedeh, M. Haffner, T. Grogan, T. Hashimoto, P. Crowell, H. Beltranet al., Cd38 is methylated in prostate cancer and regulates extracellular nad+, Cancer & Metabolism, vol. 6, no. 1, 2018. https://doi.org/10.1186/s40170-018-0186-3

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.