CD38 Cell Lysate – Tissue Lysate

PRODUCT OVERVIEW

Product Name	CD38, Cell Lysate
Full Product Name	Human CD38 HEK293 Overexpression Lysate
Product Gene Name	CD38 cell lysate
Product Synonym Names	Human CD38 HEK293 Cell Lysate (WB positive control); CD38 molecule; Human ADPRC 1 Overexpression Lysate; Human ADPRC1 Overexpression Lysate; Human T10 Overexpression Lysate
Sequence	Val43-Ile3 00
Host	HEK293 Cells
Form/Format	1x Sample Buffer (1x modified RIPA buffer+1x SDS loading buffer). Modified RIPA Lysis Buffer: 50 mM Tris-HCl pH 7.4, 150 mM NaCl, 1mM EDTA, 1% Triton X-100, 0.1% SDS, 1% Sodium deoxycholate, 1mM PMSF.
Preparation and Storage	Store at 4 degree C for up to twelve months from date of receipt. After re-dissolution, aliquot and store at -80 degree C for up to twelve months. Avoid repeated freeze-thaw cycles. Samples are stable for up to twelve months from date of receipt.
Molecular Weight	13,788 Da
Sequence Positions	269aa
OMIM	107270
3D Structure	ModBase 3D Structure for P28907
Species	Human
Recommend Usage	1. Centrifuge the tube for a few seconds and ensure the pellet at the bottom of the tube.**2. Re-dissolve the pellet using 200uL pure water and boil for 2-5 min.**
Sequence Construction	A DNA sequence encoding the extracellular domain of human CD38 (NP_001766.2) (Val 43-Ile 300) with a C-terminal polyhistidine tag was expressed.
Preparation Method	Cell lysate was prepared by homogenization of the over-expressed cells in ice-cold modified RIPA Lysis Buffer with cocktail of protease inhibitors. Cell debris was removed by centrifugation. Protein concentration was determined by Bradford assay (protein assay, Microplate Standard assay). The cell lysate was boiled for 5 min in 1 x SDS loading buffer (50mM Tris-HCl pH 6.8, 12.5% glycerol, 1% sodium dodecylsulfate, 0.01% bromophenol blue) containing 5% b-mercaptoethanol, and lyophilized.
Product Categories/Family for CD38 cell lysate	Cancer Drug Targets
Applications Tested/Suitable for CD38 cell lysate	Western Blot (WB)
Application Notes for CD38 cell lysate	WB: Use at an assay dependent dilution.

Related Product Information for CD38 cell lysate	The cluster of differentiation (CD) system is commonly used as cell markers in Immunophenotyping. Different kinds of cells in the immune system can be identified through the surface CD molecules associating with the immune function of the cell. There are more than 320 CD unique clusters and subclusters have been identified. Some of the CD molecules serve as receptors or ligands important to the cell through initiating a signal cascade which then alter the behavior of the cell. Some CD proteins do not take part in cell signal process but have other functions such as cell adhesion. Cluster of differentiation 38 (CD38), also known as ADP-ribosyl cyclase, is a glycoprotein found on the surface of many immune cells (white blood cells), including CD4+, CD8+, B and natural killer cells. It shares several characteristics with ADP-ribosyl cyclase 2 CD157. CD38 is a multifunctional ectoenzyme that catalyzes the synthesis and hydrolysis of cyclic ADP-ribose (cADPR) from NAD+ to ADP-ribose. It also functions in cell adhesion, signal transduction and calcium signaling. CD38 has been used as a prognostic marker in leukemia. It can also be used to identify plasma cells. This Human CD38 overexpression lysate was created in HEK293 Cells and intented for use as a Western blot (WB) positive control. Purification of CD38 protein from the overexpression lysate was verified.
Product References and Citations for CD38 cell lysate	Zola H, et al. (2007) CD molecules 2006-human cell differentiation molecules. J Immunol Methods. 318 (1-2): 1-5.Ho IC, et al. (2009) GATA3 and the T-cell lineage: essential functions before and after T-helper-2-cell differentiation. Nat Rev Immunol. 9 (2): 125-35.Matesanz-Isabel J, et al. (2011) New B-cell CD molecules. Immunology Letters.134 (2): 104-12.
Other Notes	Small volumes of CD38 cell lysate vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for CD38 purchase	MBS8114159 is a cell lysate targeting CD38. Also known as Human CD38 HEK293 Overexpression Lysate. Host: HEK293 Cells.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for CD38. It may not necessarily be applicable to this product.

NCBI GI #	38454326
NCBI GeneID	952
NCBI Accession #	NP_001766.2
UniProt Primary Accession #	P28907
UniProt Secondary Accession #	O00121; O00122; Q96HY4
UniProt Related Accession #	P28907
GenBank Nucleotide #	NM_001775.3
NCBI Official Full Name	ADP-ribosyl cyclase/cyclic ADP-ribose hydrolase 1
NCBI Official Synonym Full Names	CD38 molecule
NCBI Official Symbol	CD38
NCBI Official Synonym Symbols	ADPRC1; ADPRC 1
UniProt Protein Name	ADP-ribosyl cyclase/cyclic ADP-ribose hydrolase 1
UniProt Synonym Protein Names	2'-phospho-ADP-ribosyl cyclase; 2'-phospho-ADP-ribosyl cyclase/2'-phospho-cyclic-ADP-ribose transferase (EC:2.4.99.20); 2'-phospho-cyclic-ADP-ribose transferase; ADP-ribosyl cyclase 1; ADPRC 1; Cyclic ADP-ribose hydrolase 1; cADPr hydrolase 1; T10; CD_antigen: CD38
Protein Family	ADP-ribosyl cyclase/cyclic ADP-ribose hydrolase
UniProt Gene Name	CD38
UniProt Synonym Gene Names	ADPRC 1; cADPr hydrolase 1
UniProt Entry Name	CD38_HUMAN
NCBI Protein Information	ADP-ribosyl cyclase/cyclic ADP-ribose hydrolase 1

NCBI Summary for CD38	The protein encoded by this gene is a non-lineage-restricted, type II transmembrane glycoprotein that synthesizes and hydrolyzes cyclic adenosine 5'-diphosphate-ribose, an intracellular calcium ion mobilizing messenger. The release of soluble protein and the ability of membrane-bound protein to become internalized indicate both extracellular and intracellular functions for the protein. This protein has an N-terminal cytoplasmic tail, a single membrane-spanning domain, and a C-terminal extracellular region with four N-glycosylation sites. Crystal structure analysis demonstrates that the functional molecule is a dimer, with the central portion containing the catalytic site. It is used as a prognostic marker for patients with chronic lymphocytic leukemia. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Sep 2015]
UniProt Comments for CD38	CD38: Synthesizes cyclic ADP-ribose, a second messenger for glucose-induced insulin secretion. Also has cADPr hydrolase activity. Also moonlights as a receptor in cells of the immune system. Belongs to the ADP-ribosyl cyclase family. 2 isoforms of the human protein are produced by alternative splicing. Protein type: EC 3.2.2.6; EC 2.4.99.20; Cofactor and Vitamin Metabolism - nicotinate and nicotinamide; Hydrolase; Cell surface; Apoptosis; Lyase; Membrane protein, integral; Cell cycle regulation Chromosomal Location of Human Ortholog: 4p15 Cellular Component: cell surface; membrane; integral to membrane; plasma membrane; nucleus Molecular Function: transferase activity; phosphorus-oxygen lyase activity; NAD+ nucleosidase activity; NAD(P)+ nucleosidase activity Biological Process: response to drug; response to retinoic acid; metabolic process; positive regulation of transcription, DNA-dependent; positive regulation of insulin secretion; female pregnancy; signal transduction; positive regulation of cell growth; response to estradiol stimulus; B cell receptor signaling pathway; elevation of cytosolic calcium ion concentration; response to hydroperoxide; positive regulation of B cell proliferation; positive regulation of vasoconstriction; response to hypoxia; response to progesterone stimulus; negative regulation of transcription, DNA-dependent; negative regulation of bone resorption; negative regulation of apoptosis
Research Articles on CD38	**1.** Results may imply that CD38 expression either reflects or participates in pathogenic mechanisms of HIV disease independently of cell cycling.
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