



Human Vascular cell adhesion molecule 1, VCAM-1 ELISA kit

Product Code	CSB-E04753h
Abbreviation	VCAM1
Protein Biological Process 1	Cardiovascular
Target Name	vascular cell adhesion molecule 1
Uniprot No.	P19320
Alias	CD106, DKFZp779G2333, INCAM-100, MGC99561, CD106 antigen
Product Type	ELISA Kit
Immunogen Species	Homo sapiens (Human)
Protein Biological Process 3	Cell adhesion
Sample Types	serum, plasma, tissue homogenates
Detection Range	1.563 ng/mL-100 ng/mL
Sensitivity	0.611 ng/mL
Assay Time	1-5h
Sample Volume	50-100ul
Detection Wavelength	450 nm
Lead Time	3-5 working days after you place the order, and it takes another 3-5 days for delivery via DHL or FedEx.
Research Area	Cardiovascular
Gene Names	VCAM1
Tag Info	quantitative
Protein Description	Sandwich

Description

The human VCAM1 ELISA kit is a solid-phase immunoassay specially designed to quantitatively measure human VCAM1 in serum, plasma, cell culture supernates, or tissue homogenates. It is based on the Sandwich-ELISA mechanism. VCAM1 in the sample is bound to the capture antibody immobilized on the 96-well strip plate and then sandwiched with the biotinylated VCAM1 antibody. After the addition of HRP-avidin and TMB substrate, the solution in the wells turns blue. The color reaction is stopped by adding the stop solution into the wells, and the color changes from blue to yellow. The color intensity is positively proportional to the VCAM1 bound in the initial step. The VCAM1 concentration can be calculated according to the standard curve. This kit is tested with high sensitivity, strong specificity, good linearity, high precision and



recovery, as well as lot-to-lot consistency.

VCAM1 (CD106) is inducibly and predominantly expressed in endothelial cells. Pro-inflammatory cytokines, such as $\text{TNF}\alpha$, as well as ROS, oxidized low-density lipoprotein, elevated glucose levels, TLR agonists, and shear stress, all promote and increase VCAM1 expression. $\text{TNF}\alpha$ increases the expression of VCAM1 on the surface of endothelial cells during inflammation. VCAM1 on active endothelial cells interacts directly with $\alpha 4\beta 1$ integrin on leukocytes, activating VCAM1 downstream signaling molecules such as Ca^{2+} , Rac1, NOX2, ROS, MMPs, $\text{PKC}\alpha$, and PTP1B. These signals eventually cause the affinity of junction adhesion molecules within endothelial cell junctions to relax, allowing leukocytes to pass through. VCAM1 is implicated in the pathogenesis of many immunological disorders, such as rheumatoid Arthritis (RA) and asthma. VCAM1 is also linked to angiogenesis and metastasis in cancer.

Target Details

This gene is a member of the Ig superfamily and encodes a cell surface sialoglycoprotein expressed by cytokine-activated endothelium. This type I membrane protein mediates leukocyte-endothelial cell adhesion and signal transduction, and may play a role in the development of atherosclerosis and rheumatoid arthritis. Two alternatively spliced transcripts encoding different isoforms have been described for this gene.

Product Precision

Intra-assay Precision (Precision within an assay): CV%<8%

Three samples of known concentration were tested twenty times on one plate to assess.

Inter-assay Precision (Precision between assays): CV%<10%

Three samples of known concentration were tested in twenty assays to assess.

	Intra-Assay Precision			Inter-Assay Precision		
Sample	1	2	3	1	2	3
n	20	20	20	20	20	20
Mean (ng/ml)	12.382	12.149	11.995	12.164	12.496	12.116
SD	0.055	0.041	0.048	0.05	0.053	0.065
CV(%)	7.087	5.356	6.329	6.526	6.784	8.508

Linearity

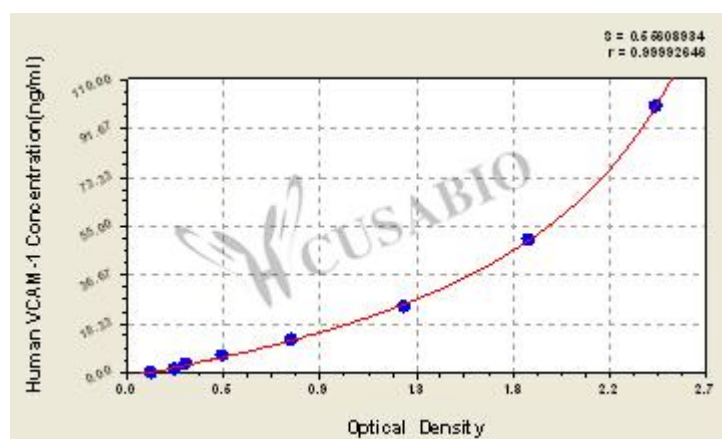
To assess the linearity of the assay, samples were spiked with high concentrations of human VCAM-1 in various matrices and diluted with the Sample Diluent to produce samples with values within the dynamic range of the assay.



	Sample	Human Serum(n=4)
1:5	Average %	89
	Range %	80-96
1:10	Average %	95
	Range %	91-99
1:20	Average %	97
	Range %	90-104
1:40	Average %	102
	Range %	95-106

Typical

These standard curves are provided for demonstration only. A standard curve should be generated for each set of samples assayed.



ng/ml	OD1	OD2	Average	corrected
0	0.119	0.116	0.118	
1.563	0.227	0.225	0.226	0.108
3.125	0.275	0.282	0.279	0.161
6.25	0.455	0.442	0.449	0.331
12.5	0.746	0.782	0.764	0.646
25	1.351	1.212	1.282	1.164
50	1.908	1.799	1.854	1.736
100	2.410	2.466	2.438	2.320

Msds

{"0":{"fileurl":"https://www.cusabio.com/uploadfile/msds/MSDS CSB-E04753h.pdf","filename":"MSDS"}}