

Human CD138/Syndecan-1 Sandwich ELISA Kit Datasheet

For the quantitative detection of Human CD138/Syndecan-1 in serum and plasma samples.

General Information

Catalogue Number	KE00234
Product Name	Human CD138/Syndecan-1 Sandwich ELISA Kit
Species cross-reactivity	Human
Range (calibration Range)	0.188-12 ng/mL
Tested applications	Quantification ELISA

Database Links

Entrez Gene	6382
SwissProt	P18827

Kit Components & Storage

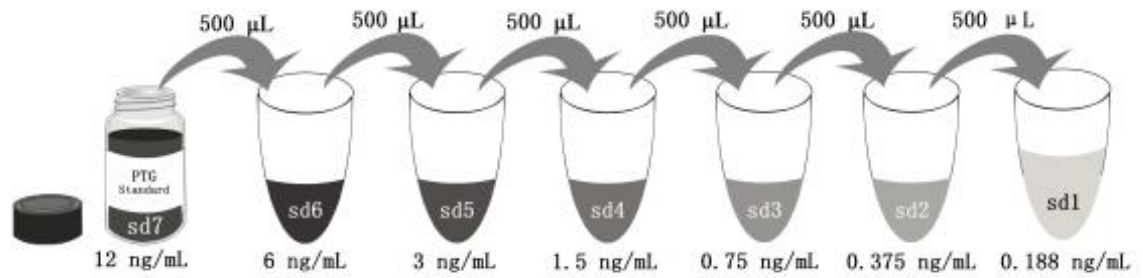
Microplate - antibody coated 96-well microplate (8 well × 12 strips)	1 plate	Unopened Kit: Store at 2-8°C for 6 months or -20°C for 12 months. Opened Kit: All reagents stored at 2-8°C for 7 days. Please use a new standard for each assay.
Protein standard - 24 ng/bottle; lyophilized*	2 bottles	
Detection antibody, HRP-conjugated (100X) - 120 µL/vial	1 vial	
Sample Diluent PT 4-ef - 30 mL/bottle.	1 bottle	
Detection Diluent - 30 mL/bottle	1 bottle	
Wash Buffer Concentrate (20X) - 30 mL/bottle	1 bottle	
Tetramethylbenzidine Substrate (TMB) - 12 mL/bottle	1 bottle	
Stop Solution - 12 mL/bottle	1 bottle	
Plate Cover Seals	3 pieces	

NB: Do not use the kit after the expiration date.

Sample Diluent PT 4-ef is for protein standard and samples

Detection Diluent is for Detection antibody.

*Add 2 mL Sample Diluent PT 4-ef in protein standard. This reconstitution gives a stock solution of 12 ng/mL.



Add # µL of Standard diluted in the previous step	—	500 µL	500 µL	500 µL	500 µL	500 µL	500 µL
# µL of Sample Diluent PT 4-ef	2000 µL	500 µL	500 µL	500 µL	500 µL	500 µL	500 µL
	"sd7"	"sd6"	"sd5"	"sd4"	"sd3"	"sd2"	"sd1"

Product Description

KE00234 is a solid phase sandwich Enzyme Linked-Immuno-Sorbent Assay (Sandwich ELISA). The CD138 ELISA kit is to be used to detect and quantify protein levels of endogenous CD138. The assay recognizes human CD138. An antibody specific for CD138 has been pre-coated onto the microwells. The CD138 protein in samples is captured by the coated antibody after incubation. Following extensive washing, another horseradish peroxidase (HRP)-conjugated antibody specific for CD138 is added to detect the captured CD138 protein. For signal development, followed by Tetramethyl-benzidine (TMB) reagent. Solution containing sulfuric acid is used to stop color development and the color intensity which is proportional to the quantity of bound protein is measurable at 450 nm with the correction wavelength set at 630 nm.

Background

CD138, also known as Syndecan-1 (SDC1), is a member of the transmembrane heparan sulfate proteoglycan family. CD138 acts as an extracellular matrix receptor and participates in many cellular functions, including cell-cell adhesion and cell-matrix adhesion. CD138 is expressed on plasma cells and various epithelial cell types. Altered CD138 expression has been described in many different tumor types. CD138 can be shed from the cell surface and exist as a soluble form, which has paracrine and autocrine functions and functions as competitor of transmembrane CD138 for growth factors and other extracellular ligands.

Sample Preparation

The serum or plasma may require proper dilution to fall within the range of the assay. 1:40 or 1:80 dilution is recommended for human serum or plasma.

Safety Notes

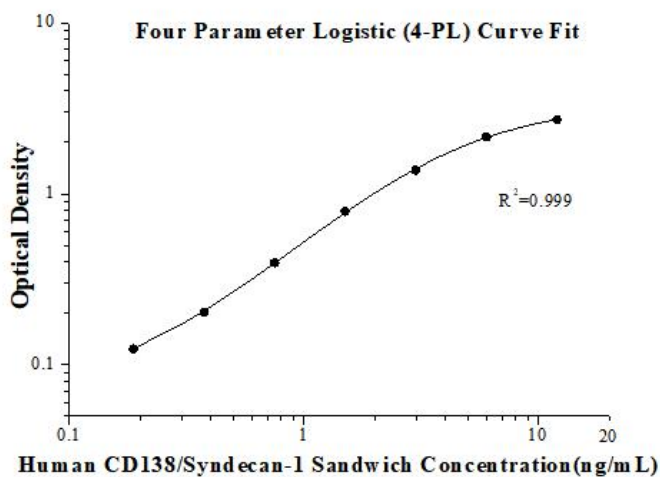
This product is sold for lab research and development use ONLY and not for use in humans or animals. Avoid any skin and eye contact with Stop Solution and TMB. In case of contact, wash thoroughly with water.

Assay Procedure Summary

Step	Reagent	Volume	Incubation	Wash	Notes
1	Standard and Samples	100 μ L	120 min	4 times	Cover Wells incubate at 37°C
2	Diluent Detection Antibody, HRP-conjugated Solution	100 μ L	40 min	4 times	Cover Wells incubate at 37°C
3	TMB Substrate	100 μ L	15-20 min	Do not wash	Incubate in the dark at 37°C
4	Stop Solution	100 μ L	0 min	Do not wash	-
5	Read plate at 450 nm and 630 nm immediately after adding Stop solution. DO NOT exceed 5 minutes.				

Example data

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



(ng/mL)	O.D	Average	Corrected
0	0.072 0.071	0.0715	-
0.188	0.144 0.143	0.1435	0.072
0.375	0.240 0.216	0.228	0.157
0.75	0.408 0.447	0.4275	0.356
1.5	0.724 0.706	0.715	0.644
3	1.260 1.497	1.319	1.307
6	1.996 1.969	1.983	1.911
12	2.596 2.652	2.624	2.553

Precision

Intra-assay Precision (Precision within an assay) Three samples of known concentration were tested 20 times on one plate to assess intra-assay precision.

Inter-assay Precision (Precision between assays) Three samples of known concentration were tested in 24 separate assays to assess inter-assay precision.

Intra-assay Precision					Inter-assay Precision				
Sample	n	Mean (ng/mL)	SD	CV%	Sample	n	Mean (ng/mL)	SD	CV%
1	20	6.07	0.42	6.9	1	24	4.78	0.46	9.6
2	20	1.34	0.07	5.5	2	24	1.26	0.12	9.7
3	20	0.31	0.04	11.4	3	24	0.35	0.02	5.8

Recovery

The recovery of CD138 spiked to three different levels in four samples throughout the range of the assay in various matrices was evaluated.

Sample Type		Average % of Expected	Range (%)
Human serum	1:80	101	87-119
	1:160	87	69-106

Sample Values

Serum and plasma samples from healthy volunteers were evaluated for CD138 in this assay. No medical histories were available for the donors used in this study.

Sample Type	Mean(ng/mL)	Rang (ng/mL)
Human plasma (n=16)	293.8	89.6-474.6
Human serum (n=16)	140.6	14.1-449.2

Sensitivity

The minimum detectable dose of human CD138 is 0.01 ng/mL. This was determined by adding two standard deviations to the concentration corresponding to the mean O.D. of 20 zero standard replicates.

Linearity

To assess the linearity of the assay, samples were diluted with the appropriate Sample Diluent to produce samples with values within the dynamic range of the assay.(The serum and plasma samples were initially diluted 1:10)

		Human serum	Human plasma
1:2	Average% of Expected	100	100
	Range (%)	-	-
1:4	Average% of Expected	98	115
	Range (%)	96-99	112-121
1:8	Average% of Expected	92	99
	Range (%)	87-100	94-106

References

1. Dhodapkar MV, Abe E, Theus A, et al. Syndecan-1 is a multifunctional regulator of myeloma pathobiology: control of tumor cell survival, growth, and bone cell differentiation. *Blood*. 1998;91(8):2679-2688.
2. O'Connell FP, Pinkus JL, Pinkus GS. CD138 (syndecan-1), a plasma cell marker immunohistochemical profile in hematopoietic and nonhematopoietic neoplasms. *Am J Clin Pathol*. 2004;121(2):254-263.
3. Gandley RE, Althouse A, Jeyabalan A, et al. Low Soluble Syndecan-1 Precedes Preeclampsia. *PLoS One*. 2016;11(6):e0157608.
4. Kind S, Merenkow C, Büscheck F, et al. Prevalence of Syndecan-1 (CD138) Expression in Different Kinds of Human Tumors and Normal Tissues. *Dis Markers*. 2019;2019:4928315.