Human DPP4 / CD26 Assay Kit - IBL

96 Well

Please read carefully this instruction prior you use this assay kit.

INSTRUCTIONS FOR USE

This product is for research use only and is not intended for diagnostic use.

KIT COMPONENT

1	**Precoated plate:** (Anti-hDPP4 (10B1) Mouse IgG)	96Well x 1
2	**Labeled antibody conc.:** (30X) HRP conjugated Anti-hDPP4 (7D1) Mouse IgG Fab' A.P.)	0.4mL x 1
3	**Standard:** (Recombinant Human DPP4/CD26)	0.5mL x 2
4	**EIA buffer**	30mL x 1
5	**Solution for labeled antibody**	12mL x 1
6	**Chromogen:** TMB solution	15mL x 1
7	**Stop solution**	12mL x 1
8	**Wash buffer conc.**	50mL x 1

MEASURING SAMPLES

Human serum, EDTA-plasma, urine, CSF and Cell culture supernatant

PRINCIPLE

This kit is a solid phase sandwich ELISA (Enzyme-linked Immunosorbent Assay). As a primary antibody is coated on a plate, samples and standard are added into the wells for 1st reaction. After the reaction, HRP-conjugated secondary antibody is added into the wells for 2nd reaction. After washing away unbound the secondary antibody, Tetra Methyl Benzidine (TMB) is added to the wells and color develops.

OPERATING PRECATION

1. Test samples should be measured soon after collection. For storage of samples, store them frozen and do not repeat freeze/thaw cycles. Thaw the test samples at a low temperature and mix them completely before measurement.
2. Test samples should be diluted with “4, EIA buffer” contained in this kit.
3. Duplicate measurement of test samples and standards is recommended.
4. Standard curve should run for each assay.
5. Use test samples in neutral pH range. The contaminations of organic solvent may affect the measurement.
6. All reagents should be brought to room temperature (R.T.) and mixed completely and gently before use. After mixing them, make sure of no change in quality of the reagents.
7. Use only “8, Wash buffer conc.” contained in this kit for washing the precoated plate. Insufficient washing may lead to the failure in measurement.
8. Fill the wash buffer each well, invert the plate and make sure the liquid is completely removed by shaking it off if you use a washing bottle. Repeat this washing process several times as instructed in order to avoid any insufficient washing process.
9. After remove the wash buffer, tapping the plate against a clean paper towel for completely removing the liquid from the wells and make sure the paper towel is not contact with inside of the wells in this process.
10. “6, Chromogen - TMB solution” should be stored in the dark due to its sensitivity against light. It should be also avoided contact with metals. Required quantity should be prepared into a collecting container for each use.
11. After adding TMB solution into the wells, the liquid in the wells gradually changes the color in blue. In this process the plate should be in dark. Remained TMB solution in the collecting container should not be returned into the original bottle of TMB solution to avoid contamination.
12. Measurement of O.D. should be done within 30 minutes after addition of “7, Stop solution”.

OPERATION MANUAL AND DOSAGES

1. Materials needed but not supplied.

Plate reader
Test tubes for dilution
Deionized water
Paper towel
Incubator (37°C±1°C)
Micropipette and tip
Measuring cylinder and beaker
Plate washer
Collecting container
(i.e. clean disposable test tube)
Refrigerator

2. Preparation

(1) Preparation of wash buffer

Dilute “8, Wash buffer conc.” 40 fold with deionized water. The diluted one is used for the assay as a wash buffer. Adjust the required quantities if needed.

(2) Preparation of labeled antibody

Dilute “2, Labeled antibody conc.” 30 fold with “5, Solution for labeled antibody” using a prepared collecting container.

(3) Preparation of standard

Add 0.5 mL of deionized water into the vial of “3, Standard” and completely dissolve it. Concentration of the standard is 16000 pg/mL.
Prepare 7 test tubes for dilution of the standard and adding 230 µL of the EIA buffer into each tube.

Put 230 µL of 16000 pg/mL standard into the tube 8000 pg/mL (Tube-1) and gently mix it. Afterword, put 230 µL of the mixed liquid of tube-1 into the tube 4000 pg/mL (Tube-2) and gently mix it. Dilute two fold standard solution in series to set up 7 points of diluted standard between 8000 pg/mL and 125 pg/mL.

Tube-1	8000	pg/mL
Tube-2	4000	pg/mL
Tube-3	2000	pg/mL
Tube-4	1000	pg/mL
Tube-5	500	pg/mL
Tube-6	250	pg/mL
Tube-7	125	pg/mL

(4) Preparation of test samples

N/A

3 MEASUREMENT PROCEDURE

(1) Add test sample blank
Determine wells for test sample blank. Put 100µL each of “4, EIA buffer” into the wells.
(2) Add prepared test samples and standard
Put 100 µL prepared test samples and 100 µL prepared standard into appropriate wells.
(3) Incubation with plate lid (1st reaction).
(4) Washing
Wash the plate with the prepared wash buffer and remove all liquid.
(5) Add prepared labeled antibody
Put 100 µL prepared labeled antibody into the wells.
(6) Incubation with plate lid (2nd reaction).
(7) Washing
Wash the plate with the prepared wash buffer and remove all liquid completely.
(8) Add “6, Chromogen - TMB solution”
Put 100 µL the TMB solution into the wells.
(9) Incubation in dark
(10) Add “7, Stop solution”
Put 100 µL the Stop solution into the wells.
(11) Determination of optical density (O.D.)
Remove any dirt or drop of water on the bottom of the plate and confirm there is no bubble on the surface of the liquid. Then, measure the both O.D. of standard and the test samples against a test sample blank.
Measurement wavelength: 450 nm. In case of 2 wavelengths:
Main wavelength is 450nm. Sub-wavelength is between 600 and 650 nm.

Table for measurement procedure

	Test samples	Standard	Test sample blank
Reagents	Test samples 100 µL	Diluted Standard 100 µL	EIA buffer 100 µL
1st reaction	Incubation for 60 minutes at 37°C with plate lid.		
Washing	4 times (wash buffer more than 350 µL)		
Labeled antibody	100 µL	100 µL	100 µL
2nd reaction	Incubation for 30 minutes at 2~8°C with plate lid.		
Washing	5 times (wash buffer more than 350 µL)		
TMB solution	100 µL	100 µL	100 µL
Chromogenic reaction	Incubation for 30 minutes at R.T. (shielded).		
Stop solution	100 µL	100 µL	100 µL
Measuring O.D.	450 nm / 600～650 nm		

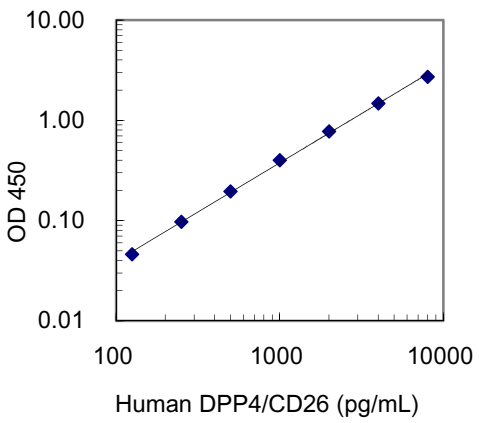
CALCULATION OF TEST RESULT

1 Plot the concentration of the standard on the x-axis and its O.D. on the y-axis. Draw a standard curve by applying appropriate regression curve on each plot (i.e. quadratic regression of double logarithm conversion).
2 Read the concentration by applying the absorbance of the test samples on a standard curve.
3 Calculate the concentration of the test samples by multiplying dilution ratio of test samples on the value.

Manufacturer: Immuno-Biological Laboratories Co., Ltd. URL: http://www.ibl-japan.co.jp E-mail: do-ibl@ibl-japan.co.jp

Example of standard curve and measured value

Standard (pg/mL)	O.D. (450nm)
8000	2.716
4000	1.472
2000	0.774
1000	0.400
500	0.195
250	0.097
125	0.046

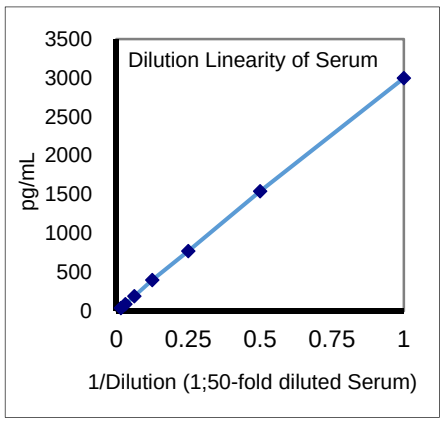


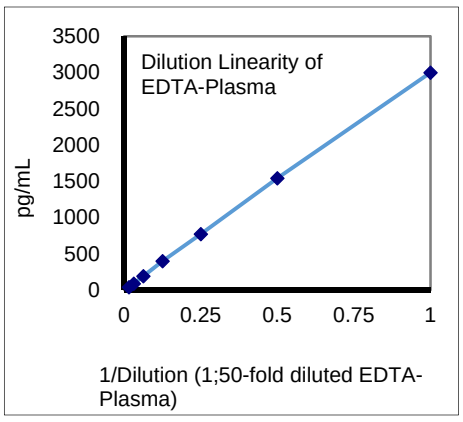
PERFORMANCE AND CHARACTERISTICS

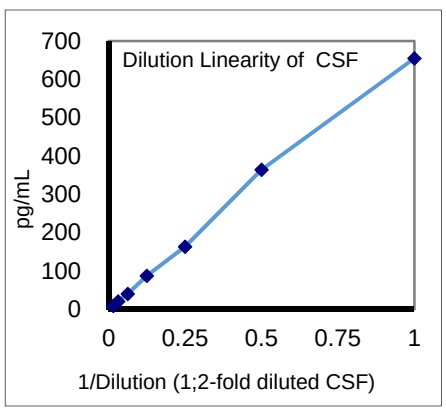
1 Sensitivity
8.58 pg/mL

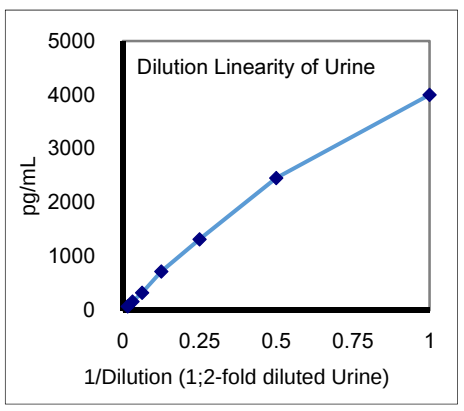
2 Measurement range
125 ～ 8000 pg/mL

3 Dilution linearity









4 Added recovery assay

Test samples	Additive amount (pg/mL)	Theoretical value (pg/mL)	Measurement value (pg/mL)	%
Added 10%FCS Supplemented TIL Media x 2	1000	1000	1088	108.8
	500	500	496	99.3
	250	250	247	98.6
Serum ×100	1000	2666	2774	104.1
	500	2166	2347	108.3
	250	1916	1969	102.8
EDTA-Plasma×100	1000	2414	2731	113.1
	500	1914	2184	114.1
	250	1664	1835	110.3
Urine x 4	1000	4178	4618	110.5
	500	3678	4199	114.2
	250	3428	3768	109.9
CSF x 2	1000	1601	1626	101.5
	500	1101	1187	107.8
	250	851	952	111.8

5 Intra-assay

Measurement value (pg/mL)	SD (pg/mL)	CV (%)	n
4968	222.3	4.5	21
1347	87.1	6.5	21
438	41.4	9.5	21

6 Inter-assay

Measurement value (pg/mL)	SD (pg/mL)	CV (%)	n
4873	194.6	4.0	8
1314	40.0	3.0	8
449	36.9	8.2	8

7 Specificity

Substance	Cross reactivity (%)
Human DPP4	100
Mouse DPP4	≦0.1
Rat DPP4	≦0.1

PRECAUTION FOR INTENDED USE AND/OR HANDLING

1 Precaution for handling (Hazard prevention)

(1) Treat the components carefully and wash hands after handling it.

(2) “7, Stop solution” is a strong acid substance (1N Sulfuric acid). Therefore, it should be careful for the treatment and do not contact your skin and clothes with it. It also needs to pay attention to the disposal of it.

2 Precaution for intended use

(1) “3, Standard” is lyophilized products. It should be careful to open this vial.

(2) All reagents should be stored at 2 - 8°C.

(3) Precipitation can be seen in “4, EIA buffer”, “5, Solution for labeled antibody” and “8, Wash buffer conc.”, however, it does not affect its performance.

(4) Do not mix or replace the reagents with the reagents from a different lot or kit.

(5) Do not use expired reagents.

3 Precaution for disposal

(1) Dispose used materials after rinsing them with large quantity of water.

STORAGE AND THE TERM OF VALIDITY

Storage Condition: 2 - 8°C
The expiry date is specified on the outer box.

PACKAGE UNIT AND PRODUCT NUMBER

Package unit: 96 Well
Product number: 27789

REFERENCES

1. Green BD, Flatt PR, Bailey CJ. Dipeptidyl peptidase IV (DPP IV) inhibitors: A newly emerging drug class for the treatment of type 2 diabetes. Diab Vasc Dis Res. 2006 Dec;3(3):159-65.
2. Lamers D, Famulla S, Wronkowitz N, Hartwig S, Lehr S, Ouwens DM, Eckardt K, Kaufman JM, Ryden M, Müller S, Hanisch FG, Ruige J, Arner P, Sell H, Eckel J. Dipeptidyl peptidase 4 is a novel adipokine potentially linking obesity to the metabolic syndrome. Diabetes. 2011 Jul;60(7):1917-25.
3. Havre PA, Abe M, Urasaki Y, Ohnuma K, Morimoto C, Dang NH. The role of CD26/dipeptidyl peptidase IV in cancer. Front Biosci. 2008 Jan 1;13:1634-45. Review.

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