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Product datasheet

Human Dipeptidyl Peptidase IV ELISA Kit (CD26) ab222872

1 References 1 Image

Overview

Product name Human Dipeptidyl Peptidase IV ELISA Kit (CD26)

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Plasma 1	20			3%
Plasma 2	20			3.6%
Plasma 3	20			3.9%

Inter-assay

Sample	n	Mean	SD	CV%
Plasma 1	20			8.5%
Plasma 2	20			10.1%
Plasma 3	20			10.5%

Sample type Cell culture supernatant, Serum, Plasma

Assay type Sandwich (quantitative)

Sensitivity 1.8 ng/ml

Range 12.5 ng/ml - 100 ng/ml

Recovery 96 %

Assay time 4h 00m

Assay duration Multiple steps standard assay

Species reactivity **Reacts with:** Human
Does not react with: Mouse, Rabbit, Cow, Dog, Monkey

Product overview Human Dipeptidyl Peptidase IV ELISA Kit (CD26) (ab222872) is designed for the quantitative

measurement of Dipeptidyl Peptidase Ⅳ (DPP4) in human plasma, serum and cell culture samples.

This assay employs a quantitative sandwich enzyme immunoassay technique that measures human DPP4 in less than 4 hours. A polyclonal antibody specific for human DPP4 has been pre-coated onto a 96-well microplate with removable strips. DPP4 in standards and samples is sandwiched by the immobilized antibody and the biotinylated polyclonal antibody specific for DPP4, which is recognized by a streptavidin-peroxidase conjugate. All unbound material is washed away and a peroxidase enzyme substrate is added. The color development is stopped and the intensity of the color is measured.

The entire kit may be stored at -20°C for long term storage before reconstitution - Avoid repeated freeze-thaw cycles.

Notes

Dipeptidyl peptidase 4 (DPP4), also known as adenosine deaminase complexing protein 2 (ADCP-2), T-cell activation antigen CD26 or CD26, belongs to the peptidase S9B family and DPPIV subfamily. It is an intrinsic membrane glycoprotein that comprises 766 amino acids and weighs 110 kDa. Its extracellular cysteine-rich region is necessary for association with collagen, dimer formation and optimal dipeptidyl peptidase activity. Under certain stimuli and chronic inflammation, DPP4 can be released from the membrane, constituting a soluble form by matrix metalloproteases (MMPs). As a serine exopeptidase, DPP4 cleaves and inactivates N-terminal X-proline dipeptides of cytokines, chemokines, and neuropeptides involved in inflammation, immunity, and vascular function. Circulating soluble DPP4 is a novel adipokine that may impair insulin sensitivity in an autocrine and paracrine fashion. DPP4 plays a role in glucose homeostasis through proteolytic inactivation of the intestinal peptide incretins, such as glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide 1 (GLP1), which are major regulators of post-prandial insulin secretion.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

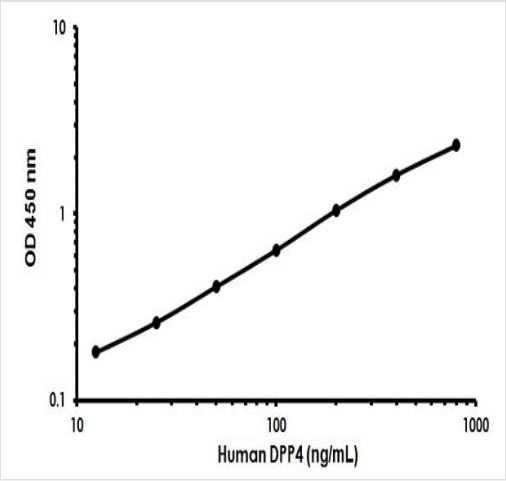
Store at -20°C. Please refer to protocols.

Components	1 x 96 tests
100X Streptavidin-Peroxidase Conjugate	1 x 80µl
10X Diluent M Concentrate	1 x 20ml
1X Standard Diluent	1 x 2ml
20X Wash Buffer Concentrate	2 x 30ml
50X Biotinylated Human DPP4	1 x 120µl
Anti- Human DPP4 coated Microplate (12 x 8 wells)	1 unit
Chromogen Substrate	1 x 7ml
Human DPP4 Standard	1 vial

Components	1 x 96 tests
Sealing Tapes	3 units
Stop Solution	1 x 11ml

Function	Cell surface glycoprotein receptor involved in the costimulatory signal essential for T-cell receptor (TCR)-mediated T-cell activation. Acts as a positive regulator of T-cell coactivation, by binding at least ADA, CAV1, IGF2R, and PTPRC. Its binding to CAV1 and CARD11 induces T-cell proliferation and NF-kappa-B activation in a T-cell receptor/CD3-dependent manner. Its interaction with ADA also regulates lymphocyte-epithelial cell adhesion. In association with FAP is involved in the pericellular proteolysis of the extracellular matrix (ECM), the migration and invasion of endothelial cells into the ECM. May be involved in the promotion of lymphatic endothelial cells adhesion, migration and tube formation. When overexpressed, enhanced cell proliferation, a process inhibited by GPC3. Acts also as a serine exopeptidase with a dipeptidyl peptidase activity that regulates various physiological processes by cleaving peptides in the circulation, including many chemokines, mitogenic growth factors, neuropeptides and peptide hormones. Removes N-terminal dipeptides sequentially from polypeptides having unsubstituted N-termini provided that the penultimate residue is proline.
Tissue specificity	Expressed specifically in lymphatic vessels but not in blood vessels in the skin, small intestine, esophagus, ovary, breast and prostate glands. Not detected in lymphatic vessels in the lung, kidney, uterus, liver and stomach (at protein level). Expressed in the poorly differentiated crypt cells of the small intestine as well as in the mature villous cells. Expressed at very low levels in the colon.
Sequence similarities	Belongs to the peptidase S9B family. DPPIV subfamily.
Domain	The extracellular cysteine-rich region is necessary for association with collagen, dimer formation and optimal dipeptidyl peptidase activity.
Post-translational modifications	The soluble form (Dipeptidyl peptidase 4 soluble form also named SDPP) derives from the membrane form (Dipeptidyl peptidase 4 membrane form also named MDPP) by proteolytic processing. N- and O-Glycosylated. Phosphorylated. Mannose 6-phosphate residues in the carbohydrate moiety are necessary for interaction with IGF2R in activated T-cells. Mannose 6-phosphorylation is induced during T-cell activation.
Cellular localization	Cell membrane. Apical cell membrane. Cell projection > invadopodium membrane. Cell projection > lamellipodium membrane. Cell junction. Membrane raft. Translocated to the apical membrane through the concerted action of N- and O-Glycans and its association with lipid microdomains containing cholesterol and sphingolipids. Redistributed to membrane rafts in T-cell in a interleukin-12-dependent activation. Its interaction with CAV1 is necessary for its translocation to membrane rafts. Colocalized with PTPRC in membrane rafts. Colocalized with FAP in invadopodia and lamellipodia of migratory activated endothelial cells in collagenous matrix. Colocalized with FAP on endothelial cells of capillary-like microvessels but not large vessels within invasive breast ductal carcinoma. Colocalized with ADA at the cell junction in lymphocyte-epithelial cell adhesion. Colocalized with IGF2R in internalized cytoplasmic vesicles adjacent to the cell surface and Secreted. Detected in the serum and the seminal fluid.

Images



Human Dipeptidyl peptidase IV ELISA Kit (ab222872)

Example of human Dipeptidyl Peptidase IV standard curve.

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