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Product datasheet

Dipeptidyl peptidase IV (DPP4) Activity Assay Kit (Fluorometric) ab204722

2 Images

Overview

Product name	Dipeptidyl peptidase IV (DPP4) Activity Assay Kit (Fluorometric)
Detection method	Fluorescent
Sample type	Serum, Tissue, Adherent cells, Suspension cells
Assay type	Enzyme activity
Assay time	0h 40m
Product overview	Dipeptidyl peptidase IV (DPP4) Activity Assay Kit (Fluorometric) (ab204722) is an assay where DPP4 cleaves a substrate to release a quenched fluorescent group, AMC (7-Amino-4-Methyl Coumarin), which can be easily detected at Ex/Em = 360/460 nm. This assay is rapid, simple, sensitive, and reliable, as well as, suitable for high throughput activity screening of DPP4. This kit detects DPP4 activity as low as 3 µU per well. DPP4 assay protocol summary: - add samples and standards to wells - add reaction mix - analyze with microplate reader for 30 min in kinetic mode
Notes	Dipeptidyl peptidase-4 (DPP4), also known as adenosine deaminase complexing protein 2 or CD26 (cluster of differentiation 26) is a protein that, in humans, is encoded by the DPP4 gene. The substrates of CD26/DPP4 are proline (or alanine) containing peptides and include growth factors, chemokines, neuropeptides, and vasoactive peptides. DPP4 plays a major role in glucose metabolism. It is responsible for the degradation of incretins such as GLP-1 and hence its inhibition by drugs such as Sitagliptin have been used for treatment of diabetes mellitus type 2. DPP4 also appears to work as a suppressor in the development of cancer and tumors.
Platform	Microplate reader

Properties

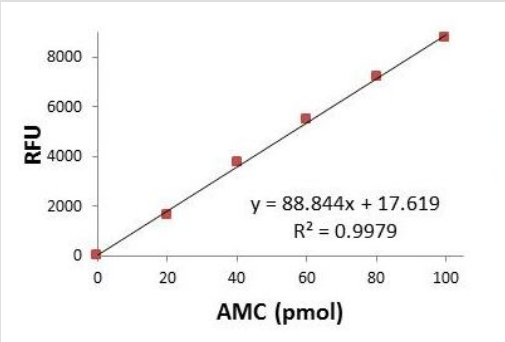
Storage instructions	Store at -20°C. Please refer to protocols.

Components	**100 tests**
AMC Standard (1 mM)	1 x 100µl

Components	100 tests
DPP4 Assay Buffer	1 x 25ml
DPP4 Inhibitor (Sitagliptin)	1 x 1ml
DPP4 Positive Control	1 x 20µl
DPP4 Substrate (H-Gly-Pro-AMC)	1 x 200µl

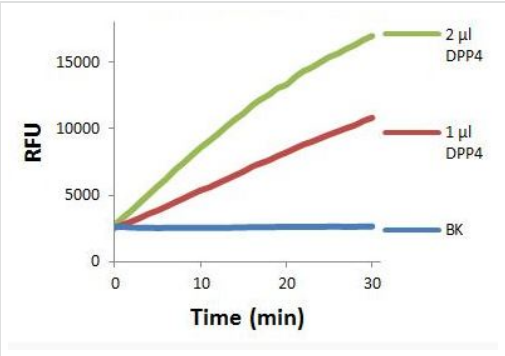
Function	Cell surface glycoprotein receptor involved in the costimulatory signal essential for T-cell receptor (TCR)-mediated T-cell activation. Acts as a positive regulator of T-cell coactivation, by binding at least ADA, CAV1, IGF2R, and PTPRC. Its binding to CAV1 and CARD11 induces T-cell proliferation 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



Dipeptidyl peptidase IV (DPP4) Activity Assay Kit (Fluorometric) (ab204722)

Typical AMC Standard calibration curve.



Dipeptidyl peptidase IV (DPP4) Activity Assay Kit (Fluorometric) (ab204722)

Dipeptidyl peptidase IV (DPP4) Positive Control.

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