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

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

Storage instructions

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


**Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPP4 Assay Buffer</td>
<td>1 x 25ml</td>
</tr>
<tr>
<td>DPP4 Inhibitor (Sitagliptin)</td>
<td>1 x 1ml</td>
</tr>
<tr>
<td>DPP4 Positive Control</td>
<td>1 x 20µl</td>
</tr>
<tr>
<td>DPP4 Substrate (H-Gly-Pro-AMC)</td>
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Dipeptidyl peptidase IV (DPP4) Activity Assay Kit (Fluorometric) (ab204722)

Typical AMC Standard calibration curve.

Dipeptidyl peptidase IV (DPP4) Positive Control.

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