Alkaline Phosphatase Assay Kit (Fluorometric) ab83371

Overview

Product name: Alkaline Phosphatase Assay Kit (Fluorometric)
Detection method: Fluorescent
Sample type: Saliva, Urine, Serum, Plasma, Other biological fluids, Tissue Extracts, Cell Lysate, Cell culture media
Assay type: Enzyme activity (quantitative)
Assay time: 1h 00m
Species reactivity: Reacts with: Other species, Mammals

Product overview

Alkaline Phosphatase Assay Kit (Fluorometric) (ab83371) is a highly sensitive kit to detect alkaline phosphatase (ALP) activity in serum and other biological samples. In the alkaline phosphatase assay protocol, ALP cleaves the phosphate group of the non-fluorescent 4-Methylumbelliferyl phosphate disodium salt (MUP) substrate, resulting in an increased fluorescent signal (Ex/Em = 360nm/440nm) when the substrate is dephosphorylated.

The kit is an ultra sensitive, simple, direct and HTS-ready assay designed to measure ALP activity with a detection sensitivity ~1 µU, more sensitive than colorimetric assays.

Alkaline phosphatase assay protocol summary:
- add samples and standards to wells
- add reaction mix to wells
- add ALP enzyme solution to standard wells (not to samples)
- incubate for 30 min at room temp
- add stop solution
- analyze with microplate reader

Notes

Alkaline phosphatase (ALP) catalyzes the hydrolysis of phosphate esters in alkaline buffer and produces an organic radical and inorganic phosphate. The change in alkaline phosphatase level and activity is associated with many diseases in the liver and bones.

Platform

Microplate reader

Properties

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

Alkaline phosphatase (ALP) catalyzes the hydrolysis of phosphate esters in alkaline buffer and produces an organic radical and inorganic phosphate. Changes in alkaline phosphatase level and activity are associated with various disease states in the liver and bone.

Cellular localization

Cell membrane; Lipid-anchor, GPI-anchor.

Functional Studies - Alkaline Phosphatase Assay Kit (Fluorometric) (ab83371)

Wang, Zhenguo et al., Medical science monitor : international medical journal of experimental and clinical research vol. 23 4095-4101., Fig 2, doi:10.12659/MSM.903027

Effects of IL-17A and/or TNF-α on alkaline phosphatase activity are shown. hMSCs were plated at a density of 5 x 10^3 cell/cm^2, cells were cultured in osteogenic medium for 14 days, in the absence (0) or presence of TNF-α 1 ng/ml and/or IL-17A 50 ng/ml. ALP activity was measured by fluorometry using ab83371. Results were analyzed using the Wilcoxon test. △ p < 0.05; △△ p < 0.005 vs. induction medium alone.

Images

<table>
<thead>
<tr>
<th>Components</th>
<th>Identifier</th>
<th>500 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALP Assay Buffer</td>
<td>NM</td>
<td>1 x 100ml</td>
</tr>
<tr>
<td>ALP Enzyme (Lyophilised)</td>
<td>Green</td>
<td>1 vial</td>
</tr>
<tr>
<td>MUP Substrate</td>
<td>Red</td>
<td>1 vial</td>
</tr>
<tr>
<td>Stop Solution</td>
<td>WM</td>
<td>1 x 25ml</td>
</tr>
</tbody>
</table>
Alkaline phosphatase measured in mouse tissue lysates showing activity (mU) per mg protein of tested sample.

Alkaline phosphatase measured in biological fluids showing quantity (mU) per microliter of tested sample.

4-Methylumbelliferone (4-MU) standard curve.

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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