Overview

**Product name**: Alanine Transaminase Activity Assay Kit (Colorimetric/Fluorometric)

**Detection method**: Colorimetric/Fluorometric

**Sample type**: Cell culture supernatant, Urine, Serum, Plasma, Other biological fluids, Tissue Extracts, Cell culture media

**Assay type**: Enzyme activity (quantitative)

**Sensitivity**: > 10 mU/well

**Assay time**: 1h 20m

**Species reactivity**: Reacts with: Mammals

**Product overview**: Alanine Transaminase Activity Assay Kit (Colorimetric/Fluorometric) ab105134 is a rapid and simple assay used to quantify alanine transaminase (ALT) activity in mammalian samples.

In the ALT assay protocol, ALT transfers an amino group from alanine to α-ketoglutarate; producing pyruvate and glutamate. The pyruvate is detected in a reaction that converts a nearly colorless probe to a form that is colored (ODmax = 570 nm) and fluorescent (Ex/Em = 535/587 nm).

The kit has a detection limit of 10 mU per well.

ALT assay protocol summary:
- add samples and standards to wells
- add reaction mix and incubate for 10 min at 37°C
- analyze every 2-3 min for 60 min with microplate reader in kinetic mode at 37°C

**Notes**: This product is manufactured by BioVision, an Abcam company and was previously called K752 Alanine Aminotransferase (ALT or SGPT) Activity Colorimetric/Fluorometric Assay Kit. K752-100 is the same size as the 100 test size of ab105134.

Alanine transaminase is also called alanine aminotransferase or serum glutamic pyruvic transaminase (ALT, ALAT, SGPT).

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.

It is the responsibility of our customers to check the necessity of application of REACH
Authorisation, and any other relevant authorisations, for their intended uses.

**Platform**

Microplate reader

**Properties**

**Storage instructions**

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

<table>
<thead>
<tr>
<th>Components</th>
<th>100 tests</th>
<th>2000 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT Positive Control</td>
<td>1 vial</td>
<td>20 vials</td>
</tr>
<tr>
<td>ALT Substrate Mix</td>
<td>1 vial</td>
<td>20 vials</td>
</tr>
<tr>
<td>Assay Buffer XIII</td>
<td>1 x 25ml</td>
<td>20 x 25ml</td>
</tr>
<tr>
<td>Development Enzyme Mix I</td>
<td>1 vial</td>
<td>20 vials</td>
</tr>
<tr>
<td>OxiRed™ Probe</td>
<td>1 x 200µl</td>
<td>20 x 200µl</td>
</tr>
<tr>
<td>Pyruvate Standard</td>
<td>1 x 100µl</td>
<td>20 x 100µl</td>
</tr>
</tbody>
</table>

**Images**

Liver samples from high fat diet (HFD) and standard carbohydrate diet (CHD) BALB/c and C57BL6/J mice were homogenised in an ALT assay buffer for the determination of ALT activity using ab105134. A separate batch of liver extracts was prepared and incubated in a buffer containing NP40 (5%) and supernatants containing the triglycerides were separated. Triglycerides concentration was determined on the supernatant fraction using ab65336. ALT activity and triglycerides concentration were determined by measuring OD at 570nm.

Determination of ALT activity using ab105134

Alanine Transaminase Activity Assay Kit

Waller-Evans H et al., PLoS One (8); e65336; 2013

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Waller-Evans H et al., PLoS One (8,12). Fig 1d. doi: 10.1371/journal.pone.0082825 Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/
Serum aspartate transaminase (AST) levels were measured using ab105135 and alanine transaminase (ALT) levels were measured using ab105134. Both levels were measured at various time periods post Con A injection. Mean values ± SD are shown (n = 4). □ P < 0.05 and □□ P < 0.01.
Fluorometric standard curve: mean of duplicates (+/- SD) with background reads subtracted.

Alanine transaminase measured in mouse tissue lysates showing quantity (mU) per mg of tested sample.

Protein concentration for samples varied from 4 mg/mL to 13 mg/mL. Samples were diluted 9-27 fold and measured colorimetrically.
Pyruvate measured colorimetrically in cell lysate after 20 min and 40 min incubation time showing quantity (nmol) per 1 mln of tested cells.

Measurement of alanine transaminase in HepG2 cells (10 μg) and liver lysate (15 μg).
Pyruvate measured fluorometrically in cell lysate after 20 min and 40 min incubation time showing quantity (nmol) per 1 mln of tested cells.

Pyruvate measured in biological fluids after 20 min and 40 min incubation time showing quantity (nmol) per ml of tested sample.

Pyruvate measured in mouse tissue lysates after 20 min and 40 min incubation time showing quantity (nmol) per mg of tested sample.
Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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