Tribioscience

Acetaldehyde Fluorometric Assay Kit (TBS2094, 100 Assays, Store at -20℃)

DESCRIPTION

Acetaldehyde is one of the most widely occurring aldehydes in nature. In the liver, ethanol is first converted to acetaldehyde by alcohol dehydrogenase. Acetaldehyde is toxic to the human body and is rapidly converted to the less harmful acetic acid by aldehyde dehydrogenase. Acetaldehyde is more toxic than alcohol and is responsible for many hangover symptoms. People with a deficiency of aldehyde dehydrogenase accumulate acetaldehyde when consuming alcohol and result in facial and body flushing referred to as "Asian flush syndrome". Although classified as a carcinogen, acetaldehyde is naturally found in many foods and beverages such as ripe fruit, coffee and wine.

Tribioscience's Acetaldehyde Assay Kit is a simple and fast assay to measure the total amount of acetaldehyde in biological samples. Acetaldehyde is oxidized by aldehyde dehydrogenase and the generated NADH reduces a specific probe to a final product measured at Ex/Em=530nm/600 nm. The fluorescent intensity is proportional to acetaldehyde concentration in the sample.

APPLICATIONS

Measure acetaldehyde in a variety of samples.

KIT CONTENTS FOR 100 TESTS:

Name	Size (100 tests)
Acetaldehyde Standard (25 mM)	100 µL
Acetaldehyde Assay Buffer	12 mL
Acetaldehyde Probe	300 µL
Substrate Solution	300 µL
Aldehyde Enzymes	420 µL

Storage conditions: Store the Reagent at -20°C and protect from light. Store Acetaldehyde Standard at 4°C.

PROCEDURES

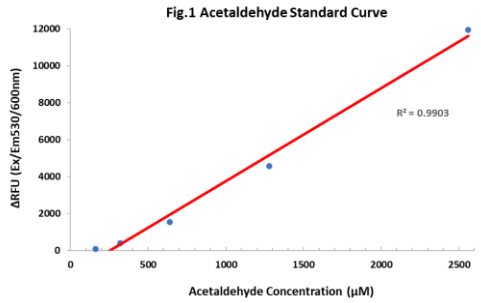
1. Equilibrate all the kit components until room temperature before starting the experiment.
2. Prepare the acetaldehyde standards: Add 30 µL of 25.6 mM Acetaldehyde to 270 µL of assay buffer in Tube #1, and then make a 2-fold serial dilution from Tube#2 to Tube#5) as the Table below. Tube#6 as blank control.

Tube #	Acetaldehyde Standard (µL)	Assay Buffer (µL)	Acetaldehyde Concentration (µM)
1	30	270	2500
2	150	150	1250
3	150	150	625
4	150	150	312
5	150	150	156
6	0	150	0

3. Preparation of the acetaldehyde enzyme working solution:

Component	Volume (µL) for 5 mL (1 plate)
Assay Buffer	4100 µL
Substrate Solution	250 µL
Aldehyde Enzymes	400 µL
Acetaldehyde Probe	250 µL

4. Add 50 µL of Acetaldehyde standards, or samples, or blank control to indicated wells in duplicate manner.
5. Add 50 µL of the acetaldehyde enzyme working solution to the test samples, acetaldehyde standards and blank control.
6. Incubate at room temperature for 60 minutes with gentle shaking and protect from light.
7. Read the plate at Ex/Em=530nm/600 nm.
8. The typical acetaldehyde standard curve is shown in Fig. 1.



9. Calculate the sample acetaldehyde concentration by the acetaldehyde standard curve:

   Y=A*X + B

   The acetaldehyde concentration X (µM) = (Y-B)*DF/A

   Y=RFU; A=Slope; B=constant value; DF=dilution factor.

10. Conversions:
    1 µM acetaldehyde equals 4.4 µg/L, or 44 ppb.

RELATIVE PRODUCTS

Lactate fluorometric assay (TBS2061)
LDH Cytotoxicity Assay (TBS2002)
LDH Activity Assay (TBS2012)
Resazurin Cell Viability (TBS2001)
CCK-8 Cell Viability Assay (TBS2022)
GOT Activity Assay (TBS2013)
Thiol Fluorometric Assay (TBS2026)
GSH Assay (TBS2028)
Homocysteine Fluorometric Assay (TBS2091)
AHCY Inhibitor Screening Assay (TBS2097)
G6PDH Activity Colorimetric Assay (TBS2102)
ATP Colorimetric/Fluorometric Assay (TBS2010)
ADP Colorimetric / Fluorometric Assay (TBS2020)
Caspase-3 Colorimetric Assay (TBS2030)
NNMT Inhibitor Screening Assay (TBS2097)
NNMT Activity Assay (TBS2098)

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