Tribioscience

CD38 Hydrolase Fluorometric Assay Kit (TBS2047, 100 Assays, Store at -20 ℃)

DESCRIPTION

Cluster of Differentiation 38 (CD38) is a multifunctional ectoenzyme expressed in many immune cells including $CD4^+$, $CD8^+$, B lymphocytes and natural killer cells. CD38 serves as a hydrolase and a nicotinamide adenine dinucleotide (NAD+) cyclase, involved in the metabolism of nicotinamide adenine dinucleotide (NAD^+) and nicotinamide adenine dinucleotide phosphate (NADP). The results are the production of $Ca2^+$-mobilizing compounds, such as cyclic ADP ribose (cADPR) and ADP ribose (ADPR). CD38 is used as a marker for poor prognosis in chronic lymphocytic leukemia and multiple myeloma and is an attractive cancer immunotherapy drug target.

Tribioscience's CD38 hydrolase Assay Kit is a simple and fast fluorometric assay that measures the hydrolase activity of CD38 in biological samples. CD38 catalyzes the conversion of substrate to a florescent product which can be measured by fluorometric method at Ex/Em=300 nm/410 nm.

APPLICATIONS

- Measure CD38 hydrolase activity in a variety of samples.
- Screen CD38 hydrolase inhibitors.

KIT CONTENTS FOR 100 TESTS:

Name	Size (100 tests)
CD38 Standard (250 µg/mL)	10 µL
CD38 Assay Buffer	12 mL
CD38 substrate	250 µL

Storage conditions: Store the Reagent at -20°C, protect from light. Shelf life: 12 months.

PROCEDURES

1. Equilibrate all the kit components until room temperature before starting the experiment.
2. Prepare the CD38 standards: Add 3 µL of 250 µg/mL CD38 to 297 µL of assay buffer in Tube #1, and then make a 2-fold serial dilution from Tube#2 to Tube#6 as the Table below. Tube#7 as blank control.

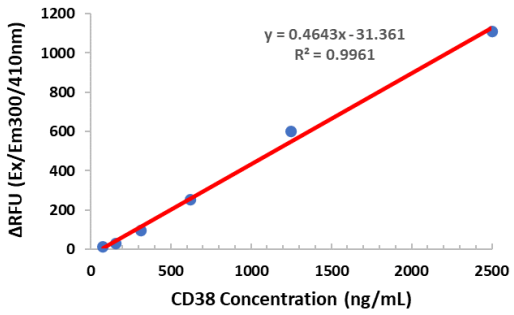
Tube #	CD38 Standard (µL)	Assay Buffer (µL)	CD38 Concentration (ng/mL)
1	3	297	2500
2	150	150	1250
3	150	150	625
4	150	150	312.5
5	150	150	156.3
6	150	150	78.1
7	0	150	0

3. Preparation of the substrate working solution for CD38 enzyme reaction:

Component	Volume (µL) for 5 mL (1 plate)
CD38 Assay Buffer	4800 µL
CD38 substrate	200 µL

4. Use a black microplate.
5. Add 50 µL of CD38 standards, or samples, or blank control to indicated wells in duplicate manner.
6. Add 50 µL of the CD38 substrate working solution to the test samples, CD38 standards and blank control.
7. Incubate at room temperature for 60 minutes with gentle shaking and protect from light.
8. Read the plate at Ex/Em = 300 nm/410 nm.
9. The typical CD38 standard curve is shown in Fig. 1.

Fig. 1 CD38 Standard Curve



10. Calculate the sample CD38 concentration by the CD38 standard curve as follows:

Y=A*X + B

The CD38 Concentration X (ng/mL) = (Y-B)*DF/A

Y=ΔRFU (RFU-$RFU_{blank\ control}$); A=Slope; B=constant value; DF=dilution factor.

RELATIVE PRODUCTS

CD38 Cyclase Activity Assay (TBS2100)
L-Lactate colorimetric assay (TBS2071)
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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Tel: 408-498-0197/ 650-917-9269, Fax: 650-618-5498· Email: order@tribioscience.com