

**CD38 Cyclase Activity Assay Kit (TBS2100, Fluorometric 100 Assays, Store at -20 °C)**

**DESCRIPTION**

CD38, also known as ADP-ribosyl cyclase, is a multifunctional ectoenzyme expressed in many immune cells including CD4<sup>+</sup>, CD8<sup>+</sup>, B lymphocytes and natural killer cells. It functions in cell adhesion, signal transduction and calcium signaling. CD38 is involved in the metabolism of nicotinamide adenine dinucleotide (NAD<sup>+</sup>) and nicotinamide adenine dinucleotide phosphate (NADP). The results are the production of Ca<sup>2+</sup>-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 Assay Kit is a simple and fast fluorometric assay that measures the cyclase activity of CD38 in biological samples. CD38 catalyzes the conversion of nicotinamide guanine dinucleotide (NGD<sup>+</sup>) to cyclic GDP-ribose (cGDPR) which can be measured by fluorometric method at Ex/Em=300 nm/410 nm.

**APPLICATIONS**

Measure CD38 Cyclase activity in a variety of samples.

**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 (µg/mL)
1	3	297	2.5
2	150	150	1.25
3	150	150	0.625
4	150	150	0.3125
5	150	150	0.156
6	150	150	0.078
7	0	150	0

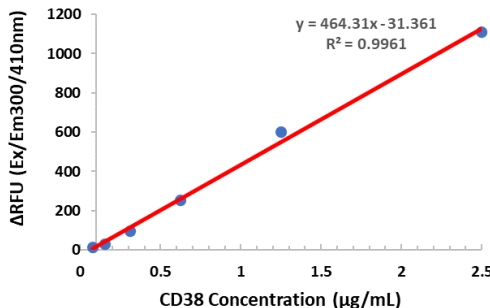
3. Preparation of the substrate working solution for CD38 enzyme reaction:

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 (µg/mL) = (Y-B)\*DF/A**

**Y=ARFU (RFU-RFU<sub>blank control</sub>); A=Slope; B=constant value; DF=dilution factor.**

**RELATIVE PRODUCTS**

- 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)

**This product is for research use only.**