XTT sodium

Cat. No.: HY-122131

CAS No.: 111072-31-2

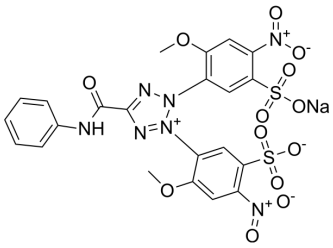
Molecular Formula: $C_{22}H_{16}N_7NaO_{13}S_2$

Molecular Weight: 673.52

Target: Biochemical Assay Reagents

Pathway: Others

Storage: -20°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 40 mg/mL (59.39 mM; ultrasonic and warming and heat to 60°C)
H_2O : 10 mg/mL (14.85 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.4847 mL	7.4237 mL	14.8474 mL
5 mM	0.2969 mL	1.4847 mL	2.9695 mL
10 mM	0.1485 mL	0.7424 mL	1.4847 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (3.71 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

XTT (sodium) is used to assess cell viability as a function of redox potential. Actively respiring cells convert the water-soluble XTT to a water-soluble, orange colored formazan product.

In Vitro

Determining Cell Viability Using XTT (sodium)[2]
1. Solution Preparation
(1) XTT (sodium) solution:
Dissolve XTT in warm culture medium at a concentration of 1 mg/mL.
(2) PMS solution:
Prepare PMS solution at a concentration of 100 mM, dissolved in phosphate-buffered saline (PBS), and store at 4°C.
(3) Mixing for use:
When ready to use, add PMS solution to the XTT solution, resulting in a final PMS concentration of 25 µM.
2. Experimental Procedure
(1) Cell culture:

Seed the cells to be tested (e.g., HT-2 T cell line) in a 96-well plate, 100 µL medium per well, and incubate at 37°C for 40 hours.
(2) Add XTT/PMS solution:
Add 25 µL of the XTT/PMS solution to each well and incubate for 4-8 hours.
(3) Measure absorbance:
At the end of the incubation, measure the absorbance at 450 nm using a microplate reader, with 650 nm as the reference wavelength, and subtract the absorbance of the blank control wells.
3. Washing and Storage
Wash the experimental equipment with Milli-Q purified water. Store PMS and XTT solutions protected from light.
4. Notes
(1) XTT solution should be freshly prepared, and dissolving it in a 60°C water bath will be easier.
(2) The incubation time may vary depending on the experiment, and over-incubation can increase background noise.
(3) PMS solution has a short storage time and should be used within one month.
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Nanobiotechnology. 2025 Jul 1;23(1):465.
- J Med Chem. 2025 Apr 8.

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REFERENCES

[1]. Roehm NW, et al. An improved colorimetric assay for cell proliferation and viability utilizing the tetrazolium salt XTT. J Immunol Methods. 1991 Sep 13;142(2):257-65.

[2]. Zhao Q, Ernst JT, Hamilton AD, Debnath AK, Jiang S. XTT formazan widely used to detect cell viability inhibits HIV type 1 infection in vitro by targeting gp41. AIDS Res Hum Retroviruses. 2002;18(14):989-997.

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