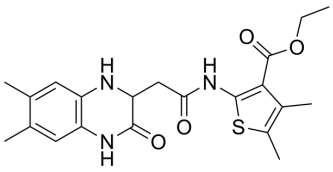
NMDI14

Cat. No.:	HY-111374
CAS No.:	307519-88-6
Molecular Formula:	$C_{21}H_{25}N_3O_4S$
Molecular Weight:	415.51
Target:	Others
Pathway:	Others

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 25 mg/mL (60.17 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4067 mL	12.0334 mL	24.0668 mL
5 mM	0.4813 mL	2.4067 mL	4.8134 mL
10 mM	0.2407 mL	1.2033 mL	2.4067 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: 0.83 mg/mL (2.00 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 0.83 mg/mL (2.00 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NMDI14 is a nonsense mediated RNA decay (NMD) inhibitor. NMDI14 disrupts the SMG7-UPF1 interactions and inhibits NMD.

IC_{50} & Target

NMD[1]

In Vitro

NMDI14 is a nonsense mediated RNA decay (NMD) inhibitor. Treating cells with NMDI14 for 6 hours leads to an increase of PTC 39 β globin to 12%, a relative four-fold increase that, if resulting in biologically active hemoglobin, would be sufficient to ameliorate the clinical symptoms of thalassemia. Three days of treatment with NMDI14 results in no decrease in cell counts, demonstrating that the pharmacological inhibition of NMD can be achieved without subtle changes in proliferation. 941 genes are increased >1.5 fold with NMDI14. The treatment of N417 cells with NMDI14 for 6 hours leads to a steady state

expression of p53 similar to that seen in U2OS cells. NMDI14 significantly increases the stability of PTC mutated p53 mRNA in N417 cells, without altering the stability of wild-type p53 in NMDI-treated U2OS cells[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]

To assess viability cells are cultured in 6 well dishes and incubated with DMSO, G418, NMDI alone or G418 with NMDI together for the indicated hours. After incubations, cells and media are collected and cells viability is measured. To assess cell proliferation U2OS, Hela and BJ-htert cells are cultured in 6 well plates and, after 24 hrs, treated with NMDI14 for 0, 24, 48 and 72hrs. The cells are collected and viable cells are counted by using the Countess Automated Cell Counter[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nature. 2023 Jun;618(7966):842-848.
- Anesthesiology. 2023 Mar 3.

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REFERENCES

[1]. Aksit MA, Bowling AD, Evans TA, et al. Decreased mRNA and protein stability of W1282X limits response to modulator therapy. J Cyst Fibros. 2019;18(5):606-613.

[2]. Martin L, et al. Identification and characterization of small molecules that inhibit nonsense-mediated RNA decay and suppress nonsense p53 mutations. Cancer Res. 2014 Jun 1;74(11):3104-1

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