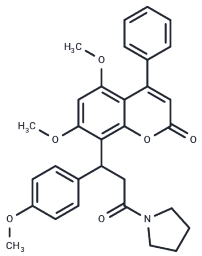
Data Sheet (Cat.No.T36493)

TargetMol

CMLD-2

Chemical Properties



CAS No. : 958843-91-9

Formula: C31H31NO6

Molecular Weight: 513.58

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	CMLD-2 is an inhibitor of HuR-ARE interaction (Ki: 350 nM) that competitively binds HuR protein and disrupts its interaction with adenine element-rich (ARE) mRNA targets. CMLD-2 induces apoptosis and exhibits antitumor effects through MAD2 downregulation. CMLD-2 (1-75 μM ; 24-72 h) had an inhibitory effect on the viability of thyroid cancer cells.CMLD-2 (20-30 μM ; 24-48 h) activated caspases and induced apoptosis in H1299 and A549 cells.CMLD-2 (30 μM ; 24-48 h) induced G1 cell cycle arrest in H1299 and A549 cells and mitochondrial perturbation. CMLD-2 (30 μM ; 24-48 h) reduced the expression of HuR and HuR-regulated mRNAs and proteins in H1299 cells.CMLD-2 (35 μM ; 72 h) decreased the directional migration ability of SW1736, 8505C, BCPAP and K1 cells.CMLD-2 induced the migration of SW1736, 8505C, BCPAP and K1 cells with a strong decrease in MAD2 mRNA levels.
Targets(IC50)	Apoptosis,HuR
In vitro	CMLD-2 (35 μM ; 72 h) impairs directional migration ability and significantly diminishes MAD2 mRNA levels in SW1736, 8505C, BCPAP, and K1 cells.[2] CMLD-2 (20-30 μM ; 24-48 h) triggers caspase activation and induces apoptosis in H1299 and A549 cells.[2] CMLD-2 (30 μM ; 24-48 h) causes G1 cell cycle arrest and disrupts mitochondrial function in H1299 and A549 cells.[2] CMLD-2 (30 μM ; 24-48 h) decreases the expression of HuR and HuR-regulated mRNAs and proteins in H1299 cells.[2] CMLD-2 (1-75 μM ; 24-72 h) suppresses thyroid cancer cell viability.[3] CMLD-2 (0.1-10 μM) reduced the activity of mouse and human sensory neurons.[5]
In vivo	CMLD-2 (0.3 μg, 1 μg, 3 μg ; i.pl.) attenuated NGF (left), and IL-6 (right) induced mechanical hypersensitivity during the acute and priming phase in male mice.[5]

Solubility Information

Solubility	DMSO: 250 mg/mL (486.78 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (3.89 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.9471 mL	9.7356 mL	19.4712 mL
5 mM	0.3894 mL	1.9471 mL	3.8942 mL
10 mM	0.1947 mL	0.9736 mL	1.9471 mL
50 mM	0.0389 mL	0.1947 mL	0.3894 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Wu X, et al. Identification and validation of novel small molecule disruptors of HuR-mRNA interaction. ACS Chem Biol. 2015 ; 10(6):1476-1484.
Muralidharan R, et al. HuR-targeted small molecule inhibitor exhibits cytotoxicity towards human lung cancer cells. Sci Rep. 2017 ; 7(1):9694.
Allegri L, et al. The HuR CMLD-2 inhibitor exhibits antitumor effects via MAD2 downregulation in thyroid cancer cells. Sci Rep. 2019 ; 9(1):7374.
Prikrylová V, et al. Synthesis and biological activity of (7S)-O-epoxyalkyl derivatives of daunomycinone. J Antibiot (Tokyo). 1985 ; 38(12):1714-1718.
Kunder N, et al. The RNA-Binding Protein HuR Is Integral to the Function of Nociceptors in Mice and Humans. J Neurosci. 2022 ; 42(49):9129-9141.