H2DCFDA (DCFH-DA)

Catalog No.C14414 Batch:C1441403

Product Datasheet

Technical Data

Formula	$C_{24}H_{16}Cl_2O_7$					
Molecular Weight	487.29	**CAS No.**	4091-99-0			
Solubility (25°C)*	In vitro	DMSO	97 mg/mL (199.06 mM)			
		Ethanol	15 mg/mL (30.78 mM)			
		Water	Insoluble			
	In vivo (Add solvents to the product individually and in order)	Oral Administration	Homogeneous suspension	CMC-NA	≥5mg/ml	Taking the 1 mL working solution as an example, add 5 mg of this product to 1 ml of CMC-Na solution, mix evenly to obtain a homogeneous suspension with a final concentration of 5 mg/ml.
		Injection	Clear solution	5%DMSO [1] → 40%PEG300 [2] → 5%Tween80 [3] → 50%ddH2O Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	4.850mg/ml (9.95mM)	Taking the 1 mL working solution as an example, add 50 μL of 97 mg/ml clarified DMSO stock solution to 400 μL of PEG300, mix evenly to clarify it; add 50 μL of Tween80 to the above system, mix evenly to clarify; then continue to add 500 μL of ddH2O to adjust the volume to 1 mL. The mixed solution should be used immediately for optimal results.
			Clear solution	5% DMSO [1] → 95% Corn oil Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	0.800mg/ml (1.64mM)	Taking the 1 mL working solution as an example, add 50 μL of 16 mg/ml clear DMSO stock solution to 950 μL of corn oil and mix evenly. The mixed solution should be used immediately for optimal results.

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

Preparing Stock Solutions

Biological Activity

Description	H2DCFDA (DCFH-DA) is a cell-permeable probe used to detect intracellular **reactive oxygen species (ROS)** production. It is de-esterified intracellularly and turns to highly fluorescent 2′,7′-dichlorofluorescein upon oxidation. This compound is used in sensitive and rapid quantitation of oxygen-reactive species in response to oxidative metabolism; microplate assay for detecting oxidative products in phagocytic cells, and quantitative multiwell myeloid differentiation assay.(Ex/Em=488/525 nm)
Targets	ROS [1]
In vitro	1. H2DCFDA (DCFH-DA) is dissolved in DMSO to obtain a 10 mM stock solutions and further diluted before use. 2. Cells are incubated with 5 μM of this compound in PBS in the dark for 30 min at 37°C, then harvested with 0.05% trypsin-EDTA solution, suspended in a fresh medium, and immediately analyzed with flow cytometer. 3. Along with it, if indicated, use ROS-insensitive modification of the fluorescein dye DCFDA as a positive control. The staining procedure is the same as for the H2DCFDA。 Emission (Em)=517 Excitation (Ex)=492 517

Protocol (from reference)

Cell Assay:[2]

- **Cell lines**
  hCECs
- **Concentrations**
  10 μM
- **Incubation Time**
  30 min
- **Method**
  Intracellular ROS levels in hCECs are measured by incubating the cells with the redox-sensitive fluorescent dye H2DCFDA (DCFH-DA) (10 μM) at 37℃ for 30 minutes in the dark. The cells are then detached from the culture wells using 0.25% trypsin-EDTA and washed twice using ice-cold PBS. Flow cytometry measurements are performed three times for each treatment. Mean fluorescence intensity is quantified using software. Cells that had been incubated without this compound are used as negative control. The distribution of fluorescent dichlorofluorescein (DCF) on the cell monolayer is visualized and photographed using a fluorescence microscope.

References

https://pubmed.ncbi.nlm.nih.gov/26976009/ https://pubmed.ncbi.nlm.nih.gov/30372737/ https://pubmed.ncbi.nlm.nih.gov/26976009/

RETURN POLICY

Capsid Bio's Unconditional Return Policy ensures a smooth online shopping experience for our customers. If you are in any way unsatisfied with your purchase, you may return any item(s) within 7 days of receiving it. In the event of product quality issues, either protocol related or product related problems, you may return any item(s) within 365 days from the original purchase date. Please follow the instructions below when returning products.

SHIPPING & STORAGE

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

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