Product Datasheet

Technical Data

Formula	$C_{12}H_{14}N_4O_8$					
Molecular Weight	342.26	**CAS No.**	186689-07-6			
Solubility (25°C)*	In vitro	DMSO	68 mg/mL (198.67 mM)			
		Ethanol	3 mg/mL (8.76 mM)			
		Water	2 mg/mL (5.84 mM)			
	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.	3.400mg/ml (9.93mM)	Taking the 1 mL working solution as an example, add 50 μL of 68 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.	0.850mg/ml (2.48mM)	Taking the 1 mL working solution as an example, add 50 μL of 17 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	2-NBDG, a fluorescent deoxyglucose derivative, is a marker for detecting glucose uptake and an indicator of cell viability.
In vitro	1.1 Preparation of the stock solution Dissolve 1 mg of 2-NBDG in 2.92 mL of DDH2O to obtain 1 mM of this compound. Note: It is recommended to store the stock solution at -20 ℃ or -80 ℃ away from light and avoid repetitive freeze-thaw cycles. 1.2 Preparation of 2-NBDG working solution. Dilute the stock solution in serum-free cell culture medium or PBS to obtain 10-200 μM of this chemical working solution. Note: Please adjust the concentration of this reagent working solution according to the actual situation. Cell staining 2.1 For suspension cells: Centrifuge at 1,000 g at 4℃ for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time. For adherent cells: Discard the cell culture medium, and add trypsin to dissociate cells to make a single-cell suspension. Centrifuge at 1000 g at 4℃ for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time. 2.2 Add 1 mL of this compound working solution, and then incubate at room temperature for 5-60 minutes. 2.3 Centrifuge at 400 g at 4℃ for 3-4 minutes and then discard the supernatant. 2.4 Wash twice with PBS, 5 minutes each time. 2.5 Resuspend cells with serum-free cell culture medium or PBS. .If test viability, recorded the optical density (O.D.) at 540/570 nm. Cell viability was calculated as a control ratio and plotted against the logarithmic concentration of the drug to calculate IC50.
In vivo	2-NBDG fluorescence intensity following 30-minutes topical application was 6-fold and 4-fold higher in OSCC and OED, respectively, compared to normal mucosa. Receiver operator characteristic analysis show 83% sensitivity and 73% specificity for detection of neoplasia vs benign (normal and inflammation). Faster fluorescence temporal decay in neoplasia indicated higher uptake and glucose metabolic rate than normal mucosa. Mucosal delivery of this compound by topical application to the in-vivo oral surface is feasible and delineates neoplasia from normal mucosa, providing in-vivo noninvasive molecular imaging of dysregulated glucose metabolism.[2]

Protocol (from reference)

Cell Assay:[1]

- **Cell lines**
  Primary cortical astrocytes
- **Concentrations**
  25 μM to 200 μM
- **Incubation Time**
  1 h
- **Method**
  Nine culture plates of astrocytes are used for each uptake experiment. After medium is removed and plates are rinsed in wash buffer, cells are incubated at 37 °C in buffer containing 25–200 μM 2-NBDG. After 1 h, buffers are replaced by fresh incubation buffer with 2 mM glucose and incubation is continued for 5 min. The cells are washed twice with prechilled phosphate-buffered saline and are incubated at room temperature in 0.1 mL cell lysis buffer for 10 min.

Animal Study:[2]

- **Animal Models**
  4-week old male Golden Syrian Hamsters
- **Dosages**
  1 mg/ml (1 ml)
- **Administration**

	Oral gavage

References

https://pubmed.ncbi.nlm.nih.gov/25091860/ https://pubmed.ncbi.nlm.nih.gov/29950704/ https://pubmed.ncbi.nlm.nih.gov/16182371/

+ Expand

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.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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