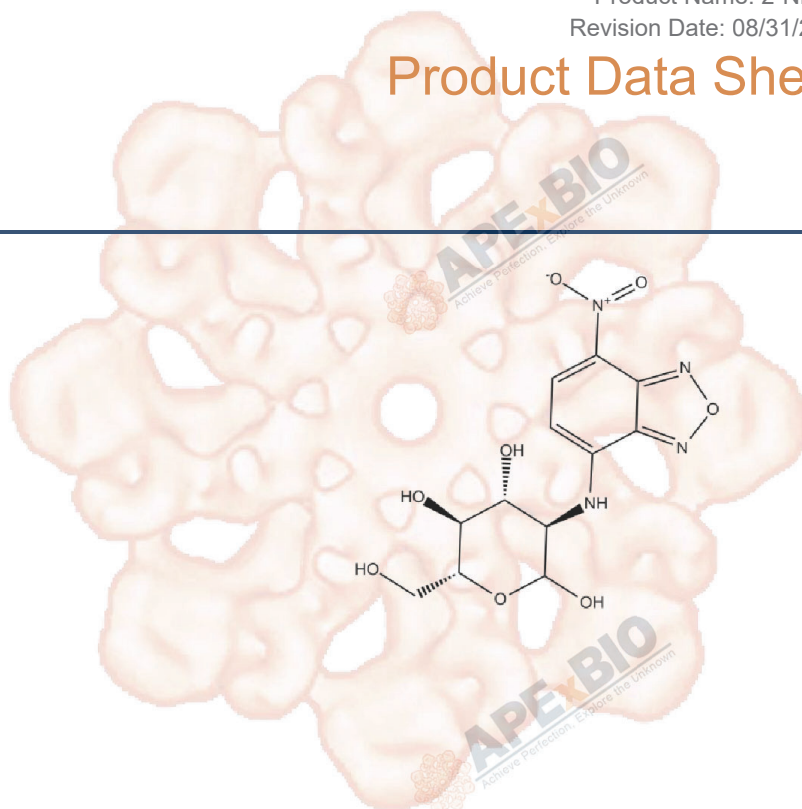


Product Data Sheet

2-NBDG

Cat. No.: B6035
CAS No.: 186689-07-6
Formula: C₁₂H₁₄N₄O₈
M.Wt: 342.26
Synonyms:
Target:
Pathway:
Storage: Store at -20°C



Solvent & Solubility

insoluble in DMSO; ≥17.1 mg/mL in H₂O with ultrasonic; ≥2.93 mg/mL in EtOH with gentle warming and ultrasonic

In Vitro

Preparing Stock Solutions	Solvent	Mass		
		1mg	5mg	10mg
	Concentration			
	1 mM	2.9218 mL	14.6088 mL	29.2176 mL
	5 mM	0.5844 mL	2.9218 mL	5.8435 mL
	10 mM	0.2922 mL	1.4609 mL	2.9218 mL

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

Biological Activity

Shortsummary

fluorescent glucose analog for visualizing glucose uptake into living cells

IC₅₀ & Target

In Vitro

Cell Viability Assay

Cell Line: HepG2 human hepatocarcinoma cells, L6 rat skeletal muscle cells, MCF-7 breast cancer epithelial cells

Preparation method: General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Reacting conditions: 10 μM for 10 min

	Applications:	In HepG2 human hepatocarcinoma cells and L6 rat skeletal muscle cells, 2-NBDG concentrations higher than 0.25 mM might show a high degree of self-quenching. 2-NBDG could be used as a fluorescent indicator for direct glucose uptake measurement. In the MCF-7 breast cancer cells, 2-NBDG uptake displayed rapid uptake for the first one to five minutes, then slowed, reaching an apparent maximum uptake near 20–30 minutes.
In Vivo	Animal experiment	
	Animal models:	Sprague–Dawley male adult rat
	Dosage form:	200 mg
	Applications:	2-NBDG can be used for localizing epileptic foci.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

1. Ling Yang, Haiqi Lin, et al. "Exercise Ameliorates Insulin Resistance of Type 2 Diabetes through Motivating Short-Chain Fatty Acid-Mediated Skeletal Muscle Cell Autophagy." *Biology* 2020, 9(8), 203; 3 August 2020. PMID:32756447
2. Kang Q, Hu M, et al. "Global Transcriptomic Analysis of Zebrafish Glucagon Receptor Mutant Reveals Its Regulated Metabolic Network." *Int J Mol Sci.* 2020;21(3):E724. PMID:31979106
3. ZheZhanga, XiLianga, et al. "Evaluation of probiotics for improving and regulation metabolism relevant to type 2 diabetes in vitro." *Journal of Functional Foods.* Available online 10 November 2019, 103664.
4. Luo P, Zhang C, et al. "Transcriptional positive cofactor 4 promotes breast cancer proliferation and metastasis through c-Myc mediated Warburg effect." *Cell Commun Signal.* 2019 Apr 16;17(1):36. PMID:30992017
5. Qiang Chu, Shuang Zhang, et al. "Cherry Anthocyanins Regulate NAFLD by Promoting Autophagy Pathway." *Oxidative Medicine and Cellular Longevity.*

See more customer validations on www.apexbt.com.

References

- [1]. Zou C, Wang Y, Shen Z. 2-NBDG as a fluorescent indicator for direct glucose uptake measurement[J]. *Journal of biochemical and biophysical methods*, 2005, 64(3): 207-215.
- [2]. O'Neil R G, Wu L, Mullani N. Uptake of a fluorescent deoxyglucose analog (2-NBDG) in tumor cells[J]. *Molecular Imaging and Biology*, 2005, 7(6): 388-392.
- [3]. Tsytsarev V, Maslov K I, Yao J, et al. In vivo imaging of epileptic activity using 2-NBDG, a fluorescent deoxyglucose analog[J]. *Journal of neuroscience methods*, 2012, 203(1): 136-140.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.



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