

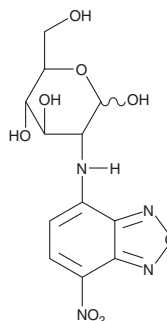
PRODUCT INFORMATION



2-NBDG

Item No. 11046

CAS Registry No.: 186689-07-6
Formal Name: 2-deoxy-2-[(7-nitro-2,1,3-benzoxadiazol-4-yl)amino]-D-glucose
Synonym: NBD-Glucose
MF: C₁₂H₁₄N₄O₈
FW: 342.3
Purity: ≥98% (mixture of α and β)
UV/Vis.: λ_{max}: 228, 266, 332, 465 nm
Ex./Em. Max: 475/550 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

2-NBDG is supplied as a crystalline solid. A stock solution may be made by dissolving the 2-NBDG in the solvent of choice, which should be purged with an inert gas. 2-NBDG is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 2-NBDG in ethanol is approximately 20 mg/ml, and approximately 10 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 2-NBDG can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 2-NBDG in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

2-NBDG is a fluorescent derivative of glucose whose uptake is competitively inhibited by D-glucose (Item No. 23733), but not L-glucose (Item No. 20829) or sucrose, in *E. coli*.¹ It has been used to monitor glucose uptake by bacteria and live mammalian cells and in tumor biopsies.¹⁻⁴ 2-NBDG displays excitation/emission maxima of 475/550 nm, respectively.¹

References

1. Yoshioka, K., Takahashi, H., Homma, T., *et al.* A novel fluorescent derivative of glucose applicable to the assessment of glucose uptake activity of *Escherichia coli*. *Biochim. Biophys. Acta* **1289**(1), 5-9 (1996).
2. Yamada, K., Saito, M., Matsuoka, H., *et al.* A real-time method of imaging glucose uptake in single, living mammalian cells. *Nat. Protoc.* **2**(3), 753-763 (2007).
3. Nitin, N., Carlson, A.L., Muldoon, T., *et al.* Molecular imaging of glucose uptake in oral neoplasia following topical application of fluorescently labeled deoxy-glucose. *Int. J. Cancer* **124**(11), 1-20 (2009).
4. Thekkek, N., Maru, D.M., Polydorides, A.D., *et al.* Pre-clinical evaluation of fluorescent deoxyglucose as a topical contrast agent for the detection of Barrett's-associated neoplasia during confocal imaging. *Technol. Cancer Res. Treat.* **10**(5), 431-441 (2011).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM