

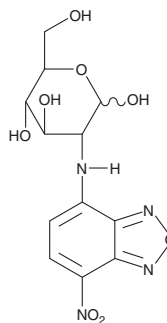
# PRODUCT INFORMATION



## 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:** C<sub>12</sub>H<sub>14</sub>N<sub>4</sub>O<sub>8</sub>  
**FW:** 342.3  
**Purity:** ≥98% (mixture of α and β)  
**UV/Vis.:** λ<sub>max</sub>: 228, 266, 332, 465 nm  
**Ex./Em. Max:** 475/550 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 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. 2-NBDG is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. 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*.<sup>1</sup> It has been used to monitor glucose uptake by bacteria and live mammalian cells and in tumor biopsies.<sup>1-4</sup> 2-NBDG displays excitation/emission maxima of 475/550 nm, respectively.<sup>1</sup>

### References

1. Yoshioka, K., Takahashi, H., Homma, T., et al. *Biochim. Biophys. Acta* **1289(1)**, 5-9 (1996).
2. Yamada, K., Saito, M., Matsuoka, H., et al. *Nat. Protoc.* **2(3)**, 753-763 (2007).
3. Nitin, N., Carlson, A.L., Muldoon, T., et al. *Int. J. Cancer* **124(11)**, 1-20 (2009).
4. Thekkekk, N., Maru, D.M., Polydorides, A.D., et al. *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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