

## Small Molecules

### 2-NBDG

Fluorescent glucose analog

Catalog #100-0546  
100-0547

1 mg  
5 mg



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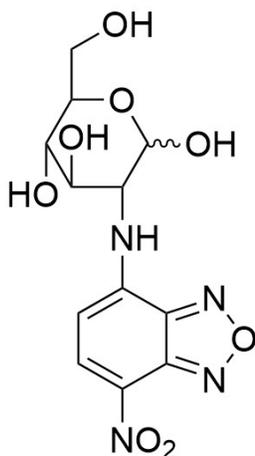
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## Product Description

2-NBDG is a fluorescent glucose analog and it is used as an indicator for cell viability by monitoring glucose uptake in living cells (Zou et al.). 2-NBDG displays excitation and emission maxima at 465 nm and 540 nm, respectively (Yoshioka et al.). The glucose moiety in 2-NBDG is supplied as a mixture of  $\alpha$  and  $\beta$  enantiomers.

Molecular Name:	2-NBDG
Alternative Names:	NBD-Glucose
CAS Number:	186689-07-6
Chemical Formula:	C <sub>12</sub> H <sub>14</sub> N <sub>4</sub> O <sub>8</sub>
Molecular Weight:	342.3 g/mol
Purity:	≥ 98%
Chemical Name:	2-deoxy-2-[(7-nitro-2,1,3-benzoxadiazol-4-yl)amino]-D-glucose
Structure:	



## Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	<ul style="list-style-type: none"><li>• PBS (pH 7.2) ≤ 25 mM</li><li>• DMSO ≤ 25 mM</li><li>• Absolute ethanol ≤ 55 mM</li></ul> For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 292 $\mu$ L of DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

## Published Applications

### CANCER RESEARCH

- Measures changes in glycolysis and has potential for use in breast cancer cells (Millon et al.).

## References

Millon SR et al. (2011) Uptake of 2-NBDG as a method to monitor therapy response in breast cancer cell lines. *Breast Cancer Res Treat* 126(1): 55–62.

Yoshioka K et al. (1996) A novel fluorescent derivative of glucose applicable to the assessment of glucose uptake activity of *Escherichia coli*. *Biochim Biophys Acta* 1289(1): 5–9.

Zou C et al. (2005) 2-NBDG as a fluorescent indicator for direct glucose uptake measurement. *J Biochem Biophys Methods* 64(3): 207–15.

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