# PRODUCT INFORMATION

## β-Gal-NONOate

*Item No. 10009137*

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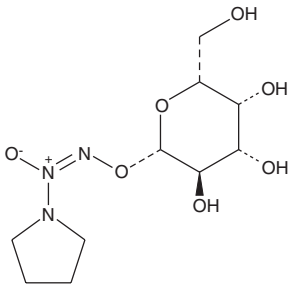
|---|---|
| **CAS Registry No.:** | 357192-77-9 |
| **Formal Name:** | 1-O-(1-pyrrolidinyl-ONN-azoxy)-β-D-glucopyranose |
| **MF:** | $C_{10}H_{19}N_3O_7$ |
| **FW:** | 293.3 |
| **Purity:** | ≥98% |
| **UV/Vis.:** | $\lambda_{max}$: 219, 250 nm |
| **Supplied as:** | A crystalline solid |
| **Storage:** | -80°C |
| **Stability:** | ≥2 years |




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

### Laboratory Procedures

β-Gal-NONOate is supplied as a crystalline solid. A stock solution may be made by dissolving the β-Gal-NONOate in the solvent of choice, which should be purged with an inert gas. β-Gal-NONOate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of β-Gal-NONOate in ethanol is approximately 3 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 β-Gal-NONOate can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of β-Gal-NONOate in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

β-Gal-NONOate is a nitric oxide (NO) donor which releases NO following activation by β-galactosidase.[1] β-Gal-NONOate is stable in aqueous solution at neutral and acidic pH for several hours, exhibits good water solubility, and is able to cross the cell membrane. Following enzymatic hydrolysis, β-Gal-NONOate decomposes with a half-life of six minutes at pH 5.6.[1] β-Gal-NONOate is cytotoxic to a number of cancer cell-lines and exhibits high bactericidal activity against *E. coli* transformed with the β-galactosidase gene.[1,2]

### References


1. Wu, X., Tang, X., Xian, M., *et al.* Glycosylated diazeniumdiolates: A novel class of enzyme-activated nitric oxide donors. *Tetrahedron Lett.* **42(23)**, 3779-3782 (2001).
2. Chen, C., Shi, Y.Q., Song, J., *et al.* Delivery of nitric oxide released from β-Gal-NONOate activation by β-galactosidase and its activity against *Escherichia coli*. *Biol. Pharm. Bull.* **29(6)**, 1239-1241 (2006).



**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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