

## Certificate of Analysis

**Product Name:** *N*-Nonyldeoxynojirimycin

**Catalog No.:** 3691

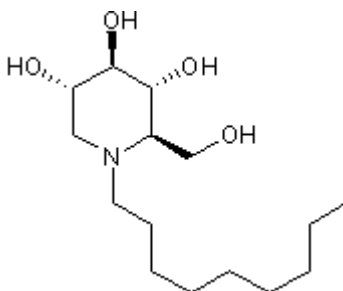
**Batch No.:** 1

**CAS Number:** 81117-35-3

**IUPAC Name:** (2*R*,3*R*,4*R*,5*S*)-2-(Hydroxymethyl)-1-nonyl-3,4,5-piperidinetriol

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>15</sub>H<sub>31</sub>NO<sub>4</sub>  
**Batch Molecular Weight:** 289.41  
**Physical Appearance:** White solid  
**Solubility:** DMSO to 100 mM  
ethanol to 100 mM  
**Storage:** Store at -20°C  
**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**TLC:** R<sub>f</sub> = 0.5 (Dichloromethane:Methanol [3:1])  
**Melting Point:** Between 105 - 106°C  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure  
**Optical Rotation:** [α]<sub>D</sub> = -15.6 (Concentration = 1.24, Solvent = Methanol)  
**Microanalysis:**

|             | Carbon | Hydrogen | Nitrogen |
|-------------|--------|----------|----------|
| Theoretical | 62.25  | 10.8     | 4.84     |
| Found       | 62.1   | 11.1     | 4.63     |

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

Glucosidase inhibitor (IC<sub>50</sub> values are 0.42 and 8.4 μM for acid α-glucosidase and α-1,6-glucosidase respectively). Inhibits liver glycogen breakdown *in vivo*. Also acts as a chemical chaperone; chaperones β-Glu folding at neutral p.H. allowing the stabilized enzyme to transit from the endoplasmic reticulum to the golgi, enabling proper trafficking to the lysosome.

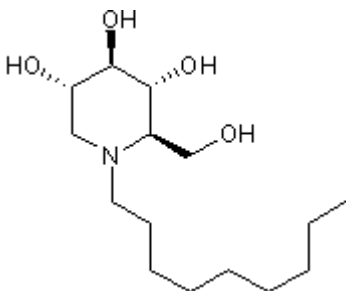
**Physical and Chemical Properties:**

Batch Molecular Formula: C<sub>15</sub>H<sub>31</sub>NO<sub>4</sub>

Batch Molecular Weight: 289.41

Physical Appearance: White solid

**Batch Molecular Structure:**



**Storage:** Store at -20°C

**Solubility & Usage Info:**

DMSO to 100 mM  
ethanol to 100 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Sawkar et al** (2002) Chemical chaperones increase the cellular activity of N307S β-glucosidase: a therapeutic strategy for Gaucher disease. *Proc.Natl.Acad.Sci.USA* **99** 15428.

**Andersson et al** (2004) Inhibition of glycogen breakdown by imino sugars *in vitro* and *in vivo*. *Biochem.Pharmacol.* **67** 697. PMID: 14757169.

**Mellor et al** (2004) Cellular effects of deoxyojirimycin analogues: inhibition of N-linked oligosaccharide processing and generation of free glucosylated oligosaccharides. *Biochem.J.* **381** 867. PMID: 15128289.

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