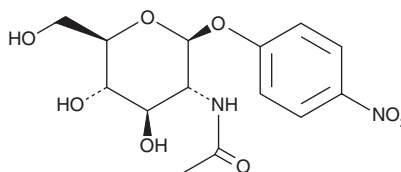


# PRODUCT INFORMATION

## 4-Nitrophenyl-N-acetyl-β-D-glucosaminide

Item No. 28954

**CAS Registry No.:** 3459-18-5  
**Formal Name:** 4-nitrophenyl 2-(acetylamino)-2-deoxy-β-D-glucopyranoside  
**Synonyms:** GlcNAc-PNP, p-Nitrophenyl-N-acetyl-β-D-glucosaminide  
**MF:** C<sub>14</sub>H<sub>18</sub>N<sub>2</sub>O<sub>8</sub>  
**FW:** 342.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 220, 296 nm  
**Supplied as:** A 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

4-Nitrophenyl-N-acetyl-β-D-glucosaminide is supplied as a solid. A stock solution may be made by dissolving the 4-nitrophenyl-N-acetyl-β-D-glucosaminide in the solvent of choice, which should be purged with an inert gas. 4-Nitrophenyl-N-acetyl-β-D-glucosaminide is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of 4-nitrophenyl-N-acetyl-β-D-glucosaminide in these solvents is approximately 3 and 15 mg/ml, respectively.

4-Nitrophenyl-N-acetyl-β-D-glucosaminide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 4-nitrophenyl-N-acetyl-β-D-glucosaminide should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 4-Nitrophenyl-N-acetyl-β-D-glucosaminide has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

4-Nitrophenyl-N-acetyl-β-D-glucosaminide is a chromogenic substrate for N-acetyl-β-glucosaminidase.<sup>1,2</sup> Hydrolysis of 4-nitrophenyl-N-acetyl-β-D-glucosaminide by N-acetyl-β-glucosaminidase releases 4-nitrophenol, which can be quantified by colorimetric detection at 405 nm as a measure of N-acetyl-β-glucosaminidase activity. It has been used to quantify the activity of N-acetyl-β-D-glucosaminidase in human serum and urine in parenterally fed patients.<sup>3</sup>

### References

1. Borooah, J., Leaback, D.H., and Walker, P.G. Studies on glucosaminidase. 2. Substrates for N-acetyl-β-glucosaminidase. *Biochem. J.* **78**(1), 106-110 (1961).
2. Bowers, G.N., Jr., McComb, R.B., Christensen, R.G., *et al.* High-purity 4-nitrophenol: Purification, characterization, and specifications for use as a spectrophotometric reference material. *Clin. Chem.* **26**(6), 724-729 (1980).
3. Raczowska, K., Zalewska-Szajda, B., Raczowski, K., *et al.* The activity of N-acetyl-β-D-hexosaminidase in serum and urine of parenterally fed patients. *Exp. Clin. Hepatology* **9**, 1-4 (2013).

#### 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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