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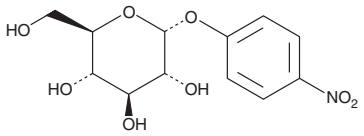
PRODUCT INFORMATION

4-Nitrophenyl α-D-Glucopyranoside

Item No. 35218

CAS Registry No.: 3767-28-0
Formal Name: 4-nitrophenyl-α-D-glucopyranoside
Synonyms: *p*-Nitrophenyl α-D-Glucopyranoside, *p*NPG, *para*-Nitrophenyl-α-D-glucopyranoside
MF: $C_{12}H_{15}NO_8$
FW: 301.2
Purity: ≥98%
UV/Vis.: λ_{max}: 221, 298 nm
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

4-Nitrophenyl α-D-glucopyranoside is supplied as a solid. A stock solution may be made by dissolving the 4-nitrophenyl α-D-glucopyranoside in the solvent of choice, which should be purged with an inert gas. 4-Nitrophenyl α-D-glucopyranoside is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 4-nitrophenyl α-D-glucopyranoside in these solvents is approximately 10 mg/ml. 4-Nitrophenyl α-D-glucopyranoside is slightly soluble in ethanol.

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 4-nitrophenyl α-D-glucopyranoside can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 4-nitrophenyl α-D-glucopyranoside in PBS (pH 7.2) is approximately 0.3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

4-Nitrophenyl α-D-glucopyranoside is a colorimetric substrate for α-glucosidases.[1] Upon enzymatic cleavage, *p*-nitrophenol is released, which can be quantified by colorimetric detection at 405 nm as a measure of α-glucosidase activity. 4-Nitrophenyl α-D-glucopyranoside has also been used as a colorimetric substrate for glucansucrases.[2]

References

1. Zeng, L., Zhang, G., Liao, Y., *et al*. Inhibitory mechanism of morin on α-glucosidase and its anti-glycation properties. *Food Funct*. **7(9)**, 3953-3963 (2016).
2. Binder, T.P. and Robyt, J.F. *p*-Nitrophenyl α-D-glucopyranoside, a new substrate for glucansucrases. *Carbohydr. Res*. **124(2)**, 287-299 (1983).

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