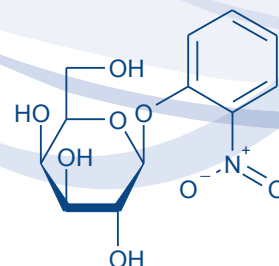


ONPG

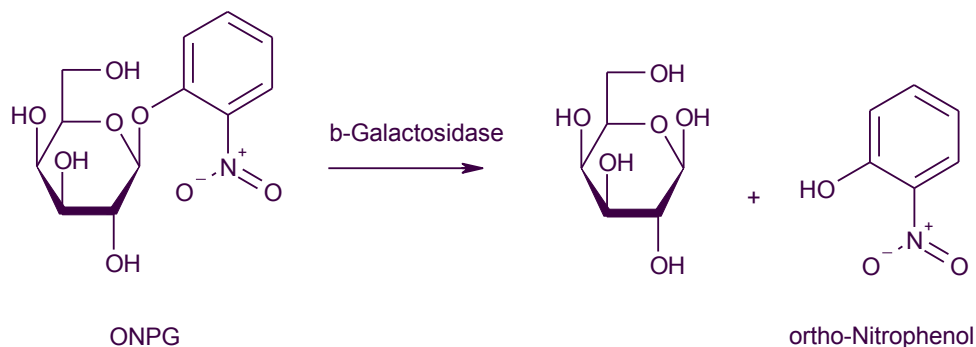
Product Code: **EN06363**
 CAS Number: **369-07-3**
 Chemical Formula: **C₁₂H₁₅NO₈**
 Molecular Weight: **301.25**



Synonyms: *2-Nitrophenyl β-D-galactopyranoside*

ONPG is the common abbreviation for *ortho*-Nitrophenyl-β-D-galactopyranoside.

ONPG is used in colourimetric and spectrophotometric assays for the detection of β-galactosidase activity which are of interest in clinical, environmental, food and molecular biology arenas.¹ ONPG is hydrolysed by β-galactosidase to yield galactose and *ortho*-Nitrophenol, which is yellow in colour and absorbs light at 420 nm. The intensity of the colour can be used to determine the rate at which β-galactosidase can hydrolyse lactose. The impact of experimental factors on the reproducibility of β-galactosidase assays has been reported.²



In common with several other β-galactosidase substrates such as X-Gal, ONPG does not act as an inducer of genes under the control of the lac operon in bacteria such as *E. coli*. In the absence of a lactose analogue such as IPTG (Product Code: EI05931) transcription of β-galactosidase will not take place and ONPG will not be hydrolysed.

References:

1. J Lederberg, *J. Bacteriol.*, **1950**, 20, 137.
2. A Giacomini et al, *FEMS Microbiol. Lett.*, **2006**, 100, 87.