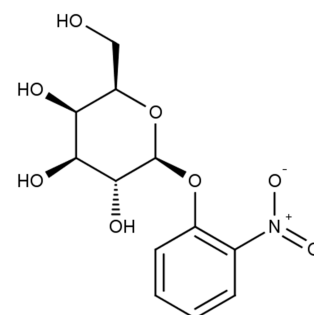




## 2-Nitrophenyl-beta-D-galactopyranoside (ONPG)

**Catalog No:** 16278  
**Lot No:** XXXXX  
**Cas No:** 369-07-3  
**Formula:** C<sub>12</sub>H<sub>15</sub>NO<sub>8</sub>  
**MW:** 301.26  
**Supplied as:** solid  
**Stability:** store at +4°C



### Background

2-Nitrophenyl- $\beta$ -D-galactopyranoside (ONPG) is a colorimetric and spectrophotometric substrate for detection of  $\beta$ -galactosidase activity. This compound is normally colorless. However, if  $\beta$ -galactosidase is present, it hydrolyzes the ONPG molecule into galactose and ortho-nitrophenol. The latter compound has a yellow color that can be used to check for enzyme activity by means of a colorimetric assay (at 420 nm wavelength).  $\beta$ -Galactosidase is required for lactose utilization, so the intensity of the color produced can be used as a measure of the enzymatic rate. Though ONPG mimics lactose and is hydrolyzed by  $\beta$ -galactosidase, it is unable to act as an inducer for the lac operon. Without another lactose analog that can act as an inducer, such as isopropyl  $\beta$ -D-1-thiogalactopyranoside (IPTG),  $\beta$ -galactosidase will not be transcribed and ONPG will not be hydrolyzed.

### Tests

#### Appearance:

#### Assay (HPLC):

$\alpha$  (20°C/D, 1%, H<sub>2</sub>O):

#### 2-Nitrophenol:

### Specifications

white crystalline powder with yellow cast  
 $\geq 99\%$   
-67° - -69°  
 $\leq 0.01\%$

### Usage

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