

## TM 1918 – ONPG BROTH

### INTENDED USE

For the differentiation of microorganisms on the basis of beta-galactosidase activity.

### PRODUCT SUMMARY AND EXPLANATION

ONPG (Ortho-nitrophenyl beta-D-galactopyranoside) is a synthetic colourless compound (galactoside) structurally similar to lactose.  $\beta$ -galactosidase positive organisms cleave ONPG to galactose and o-nitrophenyl, a yellow compound. The ONPG test is especially useful in the rapid identification of cryptic lactose fermenters (late fermenters). Since members of family Enterobacteriaceae are routinely grouped according to their lactose fermenting ability the ONPG test is significant here. ONPG Broth is used to differentiation of organisms based on their ability to utilize Ortho-nitrophenyl beta-D galactopyranoside. ONPG is similar in structure to lactose. The presence of two enzymes is required to demonstrate lactose fermentation in a conventional test. The first enzyme permease, facilitates the entry of lactose molecules into the bacterial cell while the second enzyme,  $\beta$ -galactosidase, hydrolyzes the lactose to yield glucose and galactose. True non-lactose fermenters lack both enzymes; however, some organisms lack permease but possess  $\beta$ -galactosidase. These organisms are late lactose fermenters.

### COMPOSITION

Ingredients	Gms / Ltr
Casein peptone	7.500
Disodium hydrogen phosphate	0.350
O-Nitrophenyl— $\beta$ -D-galactopyranoside	1.500
Sodium chloride	3.750

### PRINCIPLE

The medium consists of Casein peptone that serves as a source of nitrogenous compounds, long chain amino acids and other growth factors. Phosphate buffers the medium. Sodium chloride maintains the osmotic balance. Ortho-nitrophenyl beta-D-galactopyranoside serves as a substrate for the presence of  $\beta$ -galactosidase enzyme.

### INSTRUCTION FOR USE

- Dissolve 13.10 grams in 1000 ml purified / distilled water.
- Heat if necessary to dissolve the medium completely. DO NOT AUTOCLAVE.
- Dispense into tubes or flasks as desired.

### QUALITY CONTROL SPECIFICATIONS

**Appearance of Powder** : Cream to yellow homogeneous free flowing powder.  
**Appearance of prepared medium** : Light amber coloured clear solution in tubes.  
**pH (at 25°C)** : 7.5  $\pm$  0.2

### INTERPRETATION

Cultural characteristics observed after incubation.



Microorganism	ATCC	Inoculum (CFU/ml)	Growth	ONPG Test	Incubation Temperature	Incubation Period
<i>Salmonella Choleraesuis</i>	12011	50-100	Luxuriant	Positive reaction: yellow colour	35-37°C	18-48 Hours
<i>Citrobacter freundii</i>	8090	50-100	Luxuriant	Positive reaction: yellow colour	35-37°C	18-48 Hours
<i>Enterobacter aerogenes</i>	13048	50-100	Luxuriant	Positive reaction: yellow colour	35-37°C	18-48 Hours
<i>Escherichia coli</i>	25922	50-100	Luxuriant	Positive reaction: yellow colour	35-37°C	18-48 Hours
<i>Proteus vulgaris</i>	13315	50-100	Luxuriant	Negative reaction: no colour change	35-37°C	18-48 Hours
<i>Salmonella Typhimurium</i>	14028	50-100	Luxuriant	Negative reaction: no colour change	35-37°C	18-48 Hours

**PACKAGING:**

In pack size of 100 gm and 500 gm bottles.

**STORAGE**

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

**Product Deterioration:** Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.













**DISPOSAL**

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

**REFERENCES**

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
2. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
3. Lowe G.H., 1962., J. Med. Lab. Technol., 19:21.



 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative <small>MedNet GmbH Birkstrasse 10, 49163 Moersdorf, Germany</small>	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

**\*For Lab Use Only**  
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