

## Phenol Red Broth Base (i23138)

Used for the determination of fermentation reactions in the differentiation of microorganisms.

Industry: General cultivation / Clinical

## Principles & Uses

Phenol Red Broth Base serves as a foundational medium for studying carbohydrate fermentation reactions, aiding in the differentiation of microorganisms based on their ability to ferment specific carbohydrates. This medium is devoid of carbohydrates, allowing it to function as a negative control or as a base for the addition of desired carbohydrates. Peptone provide essential nitrogenous nutrients for microbial growth. The inclusion of sodium chloride maintains osmotic equilibrium, and phenol red serves as a pH indicator, turning yellow in acidic conditions. Gas formation is observed in Durham's tubes. This medium is versatile, supporting the growth of various *Enterobacteriaceae*.

Control tubes without inoculation run parallel to monitor changes. The medium is particularly suitable for anaerobes when used promptly or reheated and cooled before use to maintain efficacy.

## Composition (gr/L)

Peptone from Casein 10 g, Sodium Chloride 5 g, Phenol Red 0.018 g.

Final pH at 25°C 7.4 ± 0.2

## Preparation from dehydrated Powder

Dissolve 15 g of the powder in 1 L of purified water. Agar (0.5 - 1.0 g) may be added if it is desirable to minimize convection currents in the broth. Dispense in suitable tubes and insert Durham tubes when gas fermentation is to be recorded.

Autoclave at 121°C for 15 minutes. Tubes should be packed loosely to ensure free access of steam.

Aseptically introduce a carbohydrate solution that has been filter-sterilized or autoclave-sterilized into the base medium.

## Quality Control

Dehydrated Appearance: Fine, homogeneous, free of extraneous material.

Prepared Appearance: Medium, orange-red to rose-red, clear to slightly hazy.

Reaction of 1.5% Solution at 25°C: pH 7.4 ± 0.2

## Cultural Response

Inoculate with fresh cultures and incubate at 35 ± 2°C for 42 - 48 hours.

Organism	Base	Dextrose	Lactose	Mannitol	Sucrose
<i>Escherichia coli</i> (25922)	K	AG	AG	AG	
<i>Enterococcus faecalis</i> (33186)		A	A		A
<i>Proteus vulgaris</i> (8427)	K	A		K	AG
<i>Pseudomonas aeruginosa</i> (10145)	K	K			
<i>Salmonella typhimurium</i> (14028)	K		K		K
<i>Shigella flexneri</i> (9199)	K	A	K	A	K
<i>Staphylococcus aureus</i> (25923)				A	

\*ATCC is a registered trade mark of the American Type Culture Collection.

K = alkaline reaction, red medium, A = acid reaction, yellow medium, G = gas production



Medium is prepared by adding 1% glucose as fermentable carbohydrate. *Pseudomonas aeruginosa* (left). *Escherichia coli* (middle). Prepared culture Medium (right).

**Storage**

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.