

# PHENOL RED DEXTROSE BROTH BASE

## INTENDED USE

Remel Phenol Red Dextrose Broth Base is a medium recommended for use in qualitative procedures for the detection of fermentation by a variety of microorganisms.

## SUMMARY AND EXPLANATION

The ability of an organism to ferment a specific carbohydrate contained in a basal medium is used to differentiate between genera and species of bacteria.<sup>1</sup> In 1950, Vera recommended using casein peptone in fermentation test media.<sup>2</sup> She reported that a peptone could be used with phenol red as the pH indicator in fermentation tests. Phenol Red Dextrose Broth is recommended for use by the AOAC International (AOAC) and the American Public Health Association (APHA).<sup>3-5</sup>

## PRINCIPLE

The advantage of a fermentation medium is that it permits observation of the fermentation reactions under both aerobic and anaerobic conditions. Phenol Red Dextrose Broth is a complete basal medium prepared with phenol red as an indicator of acid production, resulting in a change in the medium from red-orange to yellow. This medium may be used for fermentation studies of pure cultures of many species of bacteria due to the high growth-promoting qualities of casein peptone. Phenol Red Broth Base w/o Carbohydrate is used as a negative control for fermentation studies.

## REAGENTS (CLASSICAL FORMULA)\*

Casein Peptone.....	10.0 g	Sodium Chloride.....	5.0 g
Dextrose.....	5.0 g	Phenol Red.....	18.0 mg

pH 7.4 ± 0.2 @ 25°C

\*Adjusted as required to meet performance standards.

## PRECAUTIONS

This product is For Laboratory Use only. It is not intended for use in the diagnosis of disease or other conditions.

## PREPARATION OF DEHYDRATED CULTURE MEDIUM

1. Suspend 20 g of medium in 1000 ml of demineralized water.
2. Dispense into tubes containing inverted fermentation vials.
3. Sterilize by autoclaving at 121°C for 15 minutes or following established laboratory procedures.

## PROCEDURE

1. Consult current editions of appropriate references for the recommended procedure for sample preparation, inoculation, testing, and interpretation.

## INTERPRETATION OF THE TEST

### Dextrose Fermentation (acid production):

Positive Test - Yellow color development  
Negative Test - No color change

### Gas Production:

Positive Test - A bubble or bubbles in the Durham tube  
Negative Test - No bubble(s) in the Durham tube

## QUALITY CONTROL

Each lot number of Phenol Red Dextrose Broth Base has been manufactured, packaged, and processed in accordance with current Good Manufacturing Practice regulations. All lot numbers have been tested using the following quality control organisms and have been found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

## CONTROL

*Escherichia coli* ATCC® 25922  
*Klebsiella pneumoniae* ATCC® 27736  
*Moraxella osloensis* ATCC® 19976

## INCUBATION

Ambient, 18-24 h @ 33-37°C  
Ambient, 18-24 h @ 33-37°C  
Ambient, 18-24 h @ 33-37°C

## RESULTS

Acid (+), Gas(+)  
Acid (+), Gas (+)  
Acid (-), Gas (-)

## BIBLIOGRAPHY

1. MacFaddin, J.F. 1985. Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria. Vol. 1. Williams & Wilkins, Baltimore, MD.
2. Vera, H.D. 1950. Am. J. Public Health. 40:1267-1272.
3. Food and Drug Administration. 2000. Bacteriological Analytical Manual Online. AOAC International, Gaithersburg, MD. <http://www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalManualBAM/ucm055778.htm>.
4. Horwitz, W. 2002. Official Methods of Analysis of AOAC International. 17<sup>th</sup> ed., 1<sup>st</sup> rev. AOAC International, Washington, D.C.
5. Downes, F.P. and K. Ito. 2001. Compendium of Methods for the Microbiological Examination of Foods. 4<sup>th</sup> ed. APHA, Washington, D.C.

Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, specimen collection, storage and transportation, materials required, quality control, and limitations.

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IFU 454282, Revised September 15, 2010

Printed in U.S.A.

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