

# PEPTONE YEAST GLUCOSE BROTH

## INTENDED USE

Remel Peptone Yeast Glucose (PYG) Broth is a liquid medium recommended for use in qualitative procedures to determine the fermentation reactions and metabolic end products of anaerobic bacteria.

## SUMMARY AND EXPLANATION

Anaerobic infections can involve virtually any organ in the body when appropriate conditions exist.<sup>1</sup> Rapid and accurate identification of pathogenic bacteria is important because treatment for anaerobic infections is frequently different than for infections caused by facultative or aerobic bacteria.<sup>2</sup> Anaerobic bacteria are unable to oxidize nutrients to form CO<sub>2</sub> and water. Instead, intermediate metabolic products are produced consisting of short chain fatty acids, organic acids, and alcohols which are distinctive for the various groups of anaerobic bacteria.<sup>3,4</sup> Definitive identification of anaerobes often requires additional biochemical tests such as PRAS biochemicals, metabolic end product analysis, and/or whole-cell fatty acid profiling by gas liquid chromatography (GLC). PYG Broth is a nonselective broth medium formulated for use in procedures to identify short-chain acid end products and aid in the identification of anaerobic bacteria isolated from clinical specimens.

## PRINCIPLE

Peptone and yeast extract supply protein and other nutrients required for the growth of anaerobic bacteria. Sodium bicarbonate and dipotassium phosphate are buffers. Glucose is an energy source. Vitamin K is required for growth of some anaerobic bacteria, in particular, some *Bacteroides* species and gram-positive sporeformers. Hemin supplies the X factor which stimulates the growth of many organisms. Cysteine helps to reduce and maintain low oxygen potential. This medium is prepared and processed in an atmosphere of nitrogen and hydrogen.

## REAGENTS (CLASSICAL FORMULA)\*

Peptone.....	20.0 g	Monopotassium Phosphate.....	40.0 mg
Glucose.....	10.0 g	Hemin.....	10.0 mg
Yeast Extract.....	10.0 g	Vitamin K.....	10.0 mg
Sodium Bicarbonate.....	0.4 g	L-Cysteine Hydrochloride.....	8.0 mg
Dipotassium Phosphate.....	40.0 mg	Magnesium Sulfate.....	8.0 mg
		Demineralized Water.....	1000.0 ml

pH 7.1 ± 0.3 @ 25°C

\*Adjusted as required to meet performance standards.

## PROCEDURE

1. Inoculate PYG broth with a few drops (0.05 - 0.1 ml) of an actively growing culture.
2. Incubate under anaerobic conditions at 35-37°C for 48 hours, or until adequate growth is obtained.
3. Perform GLC analysis following established laboratory procedures.

## QUALITY CONTROL

All lot numbers of PYG Broth 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, patient results should not be reported.

## CONTROL

*Bacteroides fragilis* ATCC® 25285  
*Clostridium perfringens* ATCC® 13124

## INCUBATION

Anaerobic, 48 h @ 35-37°C  
Anaerobic, 48 h @ 35-37°C

## RESULTS

Growth  
Growth

## LIMITATIONS

1. This product is only part of the overall scheme for identification of anaerobic bacteria. Further biochemical testing may be required for definitive identification. Consult appropriate references.<sup>1-5</sup>

## BIBLIOGRAPHY

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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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