

## PRODUCT INFORMATION AND QUALITY CONTROL SHEET

### MacCONKEY BROTH

#### I. INTENDED USE

**MacConkey Broth** is used for the detection of coliform bacteria in milk and water.

Non-fermenting organisms produce good growth, but will not produce acid.

#### II. SUMMARY AND EXPLANATION

MacConkey Broth is a modification of the original bile salt broth recommended by MacConkey, containing 0.5% sodium taurocholate and litmus as an indicator.<sup>1</sup> MacConkey suggested further variations of this formula using neutral red indicator instead of litmus.<sup>2,3</sup> Childs and Allen demonstrated the inhibitory effect of neutral red and substituted the less inhibitory Bromcresol purple.<sup>4</sup>

NCCLS Control Organisms (ATCC Strains)	
<i>Enterobacter aerogenes</i> (ATCC 13048)	Growth, yellow broth
<i>Escherichia coli</i> (ATCC 25922)	Growth, yellow broth
<i>Salmonella typhimurium</i> (ATCC 14028)	Growth no color change
<i>Staphylococcus aureus</i> (ATCC 25923)	Inhibited

#### III. PRINCIPLES OF THE PROCEDURE

Enzymatic Digest of Gelatin provides the nitrogen and vitamin sources in MacConkey Broth. Lactose is the carbohydrate for Gram-negative lactose-fermenting bacilli. Bile Salts inhibit the growth of gram-positive organisms. Bromcresol Purple is the indicator.

#### XII. LIMITATIONS

Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

#### IV. TYPICAL FORMULA AND APPEARANCE

Enzymatic Digest of Gelatin..... 20 g  
Lactose ..... 10 g  
Bile Salts ..... 5 g  
Bromcresol Purple ..... 0.01 g  
Final pH: 7.3 ± 0.2 at 25°C  
Formula may be adjusted and/or supplemented as required to meet performance specifications.

#### XIII. REFERENCES

1. **MacConkey, A.** 1901. Centr. Bakt. **29**:740.
2. **MacConkey, A.** 1905. Lactose-fermenting bacteria in faeces. J. Hyg. **5**:333-379.
3. **MacConkey, A.** 1908. Bile salt media and their advantage in some bacteriological examinations. J. Hyg. **8**:322-379.
4. Childs Eileen and Allen L. A. (1953) *J. Hyg. Camb.* **51**. 468-477.

Prepared medium is dark purple to red-purple, and clear to slight hazy.

### USER QUALITY ASSURANCE/ QUALITY CONTROL PROCEDURES AND INFORMATION

HealthLink recommends that the following quality assurance and quality control procedures be performed on each batch of product.

#### V. PRECAUTIONS

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

#### I. QUALITY ASSURANCE

The following quality assurance procedures must be performed to assure the product will perform according to its intended use within the assigned expiry date:

#### VI. STORAGE/SHELF LIFE

Media should be stored at 2-8°C (36-46°F). DO NOT FREEZE OR EXPOSE TO HIGH TEMPERATURES. Allow unopened tubes to warm to room temperature prior to inoculation. Prior to and during inoculation procedures, tubes should be handled in a manner that minimizes product exposure to the environment. Product that has exceeded the assigned expiration date noted on the label should not be used.

1. Daily, document that product storage refrigerator maintains temperature within the recommended range: 2-8°C.
2. Daily, document that laboratory incubator maintains temperature within the recommended range: 33-37°C.

Do not use tubes that exhibit evidence of discoloration, microbial contamination or any other signs of deterioration.

#### II. QUALITY CONTROL

The following incoming inspection procedures must be performed for each batch (batch = same lot, same shipment) of culture media received in the laboratory:

#### VII. SPECIMEN COLLECTION

The quality of culture results depends primarily on the adequacy and condition of the specimen submitted for examination. Refer to appropriate references for specimen collection and preparations.

Inspect tubes according to instructions contained in Section VI "STORAGE/SHELF LIFE"

#### VIII. MATERIALS PROVIDED

MacConkey Broth tubes 10 per box.

Note: Notify Technical Service immediately if media does not meet the inspection criteria.

#### IX. MATERIALS REQUIRED BUT NOT PROVIDED

Incubator maintaining 33-37°C.  
Ancillary culture media, reagents and laboratory equipment as required.

### TECHNICAL SERVICE

#### X. PROCEDURE

Refer to the appropriate references using MacConkey Broth.

HealthLink provides a toll free technical service line (1-800-638-2625) to assist with product usage. To have technical questions answered; please call between the hours of 9:00 am to 5:00 pm EST.

#### XI. EXPECTED RESULTS

Lactose-fermenting organisms grow well in MacConkey Broth and produce acid, causing the medium to turn yellow.

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