

## Methyl Red Indicator

### Intended Use

To detect the ability of an organism to produce and maintain stable acid end products formed from glucose fermentation.

### Summary

Different bacteria convert glucose to pyruvate using different metabolic pathways. Some of these pathways produce unstable acidic products, which quickly convert to neutral compounds. Some organisms use the butylenes glycol pathway, which produces neutral end products including acetoin and/or 2,3-butanediol. Other organisms use the mixed acid pathway, which produce stable acidic end products such as lactic, formic and acetic acid. The Methyl Red Indicator test detects the ability of an organism to produce and maintain these stable acid end products formed from glucose fermentation.

### Principle

The Methyl Red test involves adding the pH indicator Methyl Red to an inoculated tube of MR-VP broth. If the organisms use the mixed acid fermentation pathway and produces stable acidic end products, the acids will overcome the buffers in the medium and produce an acidic environment in the medium. When methyl red is added, if acidic end products are present, the Methyl Red Indicator will stay red.

### Reagents/contents

The Microxpress® Methyl Red Indicator is a reagent set for laboratory use only.

The Methyl Red Indicator comprised of:

1. 0.02% Methyl Red Indicator

### Storage and stability

1. Store the Methyl Red Indicator at 15°C-25°C away from light.
2. Stability of the Methyl Red Indicator is as per the expiry date mentioned on the label.

### Procedure

#### Preparation of inoculum

1. Isolate the organism to be identified on Nutrient Agar or Brain Heart Infusion Agar.
2. Pick up a single isolated colony and inoculate in 4-5 mL Brain Heart Infusion Broth.
3. Incubate at 37°C for 6-8 hours until inoculum turbidity is between 0.1-0.2 at 620 nm. Alternately, a homogenous suspension made in 2-3 mL sterile saline adjusted to a turbidity 0.1-0.2 at 620 nm can also be used as inoculum.

### Test Procedure

1. Inoculate an aliquot (1 mL) of a suitable medium brain like heart infusion broth with the above-prepared inoculum (approx. 100 µL) and incubate for 6-8 hours at 35-37°C.
2. Observe for growth.
3. Add 1-2 drops of Methyl Red Indicator to the tube.
4. Observe for colour change.

**Appearance:** Red coloured solution.

### Interpretation of results

1. Formation of red colour indicates a positive reaction.
2. Formation of yellow colour indicates a negative reaction

### Quality control

#### Organism (ATCC)

*Klebsiella aerogenes* (13048)  
*Escherichia coli* (25922)

#### Reaction in MR Test

-  
+

**Key:**

- + = Red colouration
- = Yellow colouration

**Precautions/limitations**

1. The Methyl Red Indicator is an in vitro diagnostic fit for laboratory use only. Not for medicinal use.
2. The Methyl Red Indicator cannot be used directly on clinical specimens. Only pure cultures should be used to obtain optimum results.
3. At time, the organism may give contradictory results because of mutation or media used for isolation, cultivation and maintenance. Results are prominent when fresh and enriched culture is used.
4. Clinical samples and microbial cultures should be considered as pathogenic biohazard and handled accordingly. Good laboratory practices and hazard precautions must be observed at all times.
5. The test is an aid to identification and is not a confirmatory test. Complete identification should include determination of gram reaction, morphology, and other biochemical and serological tests.
6. Do not use damaged or leaking kits. Avoid contact of reagents with skin and eyes.

**Warranty**

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

**References**

1. Color Atlas and Textbook of Diagnostic Microbiology, 4th edition, Elmer W. Koneman. Stephen D. Allen., William M. Janda., Paul C. Schreckenberger., Washington C. Winn.
2. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

**Product Presentation:**

<b>Cat No.</b>	<b>Product</b>	<b>Pack Size</b>
204130990125	Methyl Red Indicator	125 mL

**Disclaimer**

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.

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