

Malonate Broth | Ready-to-use Media

a product by **Biomed MDX**

Effective Date: 22/12/2025

REF TB05M5001



Intended Use:

A biochemical test to differentiate Enterobacteriaceae based on the ability to utilize malonate as a carbon source.

Principle of the Procedure:

The biochemical efficacy of Malonate Broth as a differential medium relies on the selective metabolic capability of specific Enterobacteriaceae to utilize sodium malonate as a primary carbon source. In this chemically defined environment, organisms possessing the necessary enzymatic machinery also utilize ammonium sulfate as a nitrogen source, leading to the accumulation of alkaline end products. This metabolic activity induces a significant increase in the medium's pH, which is visually indicated by a color transition in the pH indicator, bromothymol blue. A positive reaction is characterized by a shift from the initial forest green to a deep Prussian blue. Conversely, organisms unable to metabolize malonate may either leave the medium unchanged or produce a yellow coloration via the fermentation of trace amounts of glucose, resulting in an acidic shift.

Product Summary:

Malonate Broth is primarily utilized as a differential medium for the identification of Gram-negative bacilli, specifically within the *Enterobacteriaceae* family, to distinguish between genera such as *Klebsiella* and *Escherichia*. The medium is formulated with key reactive components including sodium malonate and ammonium sulfate, which serve as the sole carbon and nitrogen sources respectively, alongside a minimal concentration of glucose to stimulate initial microbial growth. The indicating system employs bromothymol blue, which transitions across a pH range of 6.0 to 7.6 to signal metabolic changes. For optimal performance and stability, the dehydrated medium requires storage between 10°C and 30°C, while prepared tubes are typically maintained under refrigeration to preserve the integrity of the biochemical indicators.

Formulation* (PER LITER):

Ammonium Sulfate	2.0g
Dipotassium Phosphate	0.6g
Monopotassium Phosphate	0.4g
Sodium Chloride	2.0g
Sodium Malonate	3.0g
Bromthymol Blue	25.0mg

pH 6.7 +/- 0.2

*Adjust and/or supplemental as required to meet performance criteria

Procedure

Materials Provided

5mL Malonate Broth.

Materials Required But Not Provided

Ancillary culture media, reagents, and laboratory equipment as required.

Test Procedure

1. Inoculate and streak the specimen as soon as possible after it is received in the laboratory with an aseptic technique.
2. Incubate at ambient air 35 ± 2 °C for 18 - 48 hours.
3. Observe the result according to user requirements.
4. Dispose of all used reagents and contaminated materials as infectious waste. Laboratories must handle and dispose of all waste safely according to regulations.

Results

Examine for colonies exhibiting typical microscopic and colonial morphology. Appropriate biochemical or immunological tests may be required for final identification

Quality Control

Inoculate representative samples with the following strains. Incubate the inoculated tubes at ambient air 35 ± 2 °C for 18 - 48 hours.

Strains	ATCC®	Growth Results
<i>Enterobacter aerogenes</i>	6305	Blue
<i>Escherichia coli</i>	25923	Green
Negative Control	-	No growth

Transportation:

Temperature fluctuations may occur during transportation. However, these fluctuations do not affect the performance, quality, or safety of the media.

Storage and Shelf Life:

Upon receipt, store tubes at 2 to 8°C in their original sleeve wrapping until just before use. Avoid freezing and overheating. The tubes may be inoculated up to the expiration date (see package label) and incubated for the recommended incubation times.

Warning and Precautions:

For in vitro diagnostic use. For Professional Use Only. Do Not Reuse.
Do not use tubes if they show evidence of microbial contamination, discoloration, drying, cracking, or other signs of deterioration.













Limitations of the Procedure

This medium is for laboratory use only and is not intended for the diagnosis of disease or other conditions. Identifications are presumptive and colonies should be identified using appropriate methods

Reference

1. Naka, A., Hinenoya, A., Awasthi, S. P., & Yamasaki, S. (2022). Isolation and characterization of *Escherichia albertii* from wild and safeguarded animals in Okayama Prefecture and its prefectural borders, Japan. *Journal of Veterinary Medical Science*, 84(9), 1299-1306.

Packaging Symbol

Symbol	Definition
	Catalogue number
	In Vitro Diagnostic Medical Device
	Batch code
	Date of manufacture
	Temperature limit
	Use-by date
	Keep away from sunlight
	Do not re-use
	Fragile, handle with care
	Consult instructions for use or consult electronic instructions for use
	Do not use if packaging damaged and consult instructions for use
	Manufacturer

Further Information:

For further information please contact your Biomed MDX representative.

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