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# MRS AGAR

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## INTENDED USE

Remel MRS Agar (Man, Rogosa, and Sharpe) is a solid medium recommended for use in qualitative procedures for isolation of *Lactobacillus* species and gram-positive cocci.

## SUMMARY AND EXPLANATION

In 1953, Rogosa et al. formulated a medium for recovery of lactobacilli from oral and fecal specimens.<sup>1</sup> In further testing it was found to be inadequate for isolation of certain *Lactobacillus* spp. from dairy products. In 1960, De Man, Rogosa, and Sharpe modified the Rogosa formulation by eliminating tomato juice and created a medium which supported the growth of slower-growing lactobacilli.<sup>2</sup> Recently MRS Agar has been used in the clinical laboratory to differentiate certain strains of gram-positive cocci and lactobacilli.<sup>3,6</sup>

## PRINCIPLE

Gelatin peptone and beef extract provide essential nutrients and amino acids necessary for bacterial growth. Yeast extract is a growth enhancer and dextrose provides an energy source. Dipotassium phosphate supplies essential electrolytes and maintains osmotic equilibrium. Polysorbate 80 supplies fatty acids required for the metabolism of lactobacilli. Ammonium citrate and sodium acetate inhibit the growth of commensal microbial flora, gram-negative bacilli, and fungi, and improve the growth of lactobacilli.

## REAGENTS (CLASSICAL FORMULA)\*

Dextrose.....	20.0 g	Dipotassium Phosphate.....	2.0 g
Gelatin Peptone.....	10.0 g	Polysorbate 80.....	1.0 g
Beef Extract.....	8.0 g	Magnesium Sulfate.....	0.2 g
Sodium Acetate.....	5.0 g	Manganese Sulfate.....	0.05 g
Yeast Extract.....	5.0 g	Agar.....	10.0 g
Ammonium Citrate.....	2.0 g	Deminerlized Water.....	1000.0 ml

pH 6.2 ± 0.2 @ 25°C

\*Adjusted as required to meet performance standards.

## PROCEDURE

1. Inoculate and streak the specimen as soon as possible after it is received in the laboratory.
2. Incubate MRS Agar anaerobically or in 5-10% CO<sub>2</sub> for 3-5 days at 33-37°C.
3. Examine the plate for growth. Definitive identification of *Lactobacillus* and gram-positive cocci such as *Leuconostoc* or *Pediococcus* requires additional biochemical tests. Consult appropriate references for further instructions.<sup>7</sup>

## QUALITY CONTROL

All lot numbers of MRS Agar 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

*Lactobacillus johnsonii* ATCC® 33200

## INCUBATION

Anaerobic, up to 72 h @ 33-37°C

## RESULTS

Growth

## 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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