

# Dehydrated Culture Media



MUELLER-

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## HINTON BROTH

**Code:** CM0405

An antimicrobial susceptibility testing medium which may be used in internationally recognized standard procedures.

### Typical Formula\*

	gm/litre
Beef, dehydrated infusion from	300.0
Casein hydrolysate	17.5
Starch	1.5
pH 7.3 ± 0.1 @ 25°C	

\* Adjusted as required to meet performance standards

### Directions

Place 21.0g in 1 litre of distilled water mix to dissolve completely. Sterilize by autoclaving at 121°C for 15 minutes. Chill and adjust cation levels if necessary<sup>1</sup>.

### Description

Oxoid Mueller-Hinton Broth has been produced in parallel with Oxoid Mueller-Hinton Agar CM0337. Where studies on antibiotic susceptibilities are being made both in broth and agar, it will be found to be of particular value to have media of identical nutrient formulation.

Mueller-Hinton Broth is recommended for broth dilution MIC studies<sup>1</sup>.

Oxoid Mueller-Hinton Broth will require supplementation with the divalent cations Mg<sup>++</sup> and Ca<sup>++</sup> after sterilisation<sup>2</sup>. The CLSI recommend the following cation levels Ca<sup>++</sup>, 20-25mg/litre; Mg<sup>++</sup>, 10-12.5mg/litre.

Lysed horse blood or thymidine phosphorylase may be added to the broth to improve the MIC endpoints of sulphonamides and trimethoprim<sup>3</sup>.

Mueller-Hinton Broth containing horse serum and agar added to create a semi-solid agar medium was used in microtitre plates in an agar dilution method for determining the MIC for *Helicobacter pylori* of a number of antibiotics. The method does not require prolonged incubation in carbon dioxide-enriched air and results are available in 48 hours compared to 3-4 days for agar diffusion testing on solid medium<sup>4</sup>.

For further details of antimicrobial susceptibility testing see relevant section.

### Storage conditions and Shelf life

Store the dehydrated medium at 10-30°C and use before the expiry date on the label.

Store the prepared medium at 2-8°C.

### Appearance

Dehydrated medium: Straw coloured, free-flowing powder

Prepared medium: Light straw to straw coloured solution

### Quality control

#### Positive controls:

##### Expected results

*Escherichia coli* ATCC® 25922 \* Turbid growth

*Pseudomonas aeruginosa* ATCC® 27853 \* Turbid growth

*Enterococcus faecalis* ATCC® 29212 \*

Turbid growth

#### Negative control:

Uninoculated medium

No change

\* This organism is available as a Culti-Loop®

### Precautions

Monitor the performance of the broth routinely using the standard QC organisms. If the broth does not

yield the expected MIC values, modify the volumes of Mg<sup>++</sup> and Ca<sup>++</sup> solutions until the MIC values approximate to those in Table 3 in reference<sup>1</sup>.

If the thymidine content is lowered, after the addition of lysed horse blood or thymidine phosphorylase, the MIC values may be lower.

#### References

1. National Committee for Clinical Laboratory Standards (2000) *Methods for Dilution Antimicrobial Susceptibility Tests for bacteria that grow Aerobically. Approved Standard M7-A5. NCCLS. Villanova, Pa.*
2. Thornsberry C., Gavan T. L. and Gerlach E. H. (1977) *Cumitech 6. American Society for Microbiology. Washington DC.*
3. Swenson J. M. and Thornsberry C. (1978) *Curr. Microbiol.* 1. 189-193.
4. Kobayashi, Hasegawa M., Saika T. et al (1997) *J. Antimicrob. Chemother.* 40. 713-716.

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