Technical Information

Sensitivity Test Broth

Product Code: DM 1486

Application: - Sensitivity Test Broth is recommended for antimicrobial susceptibility tests.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	11.000
Peptic digest of animal tissue	3.000
Dextrose	2.000
Sodium chloride	3.000
Starch, soluble	1.000
Disodium phosphate	2.000
Sodium acetate	1.000
Magnesium glycerophosphate	0.200
Calcium gluconate	0.100
Cobaltous sulphate	0.001
Cupric sulphate	0.001
Ferrous sulphate	0.001
Zinc sulphate	0.001
Manganous chloride	0.002
Menadione	0.001
Cyanocobalamin	0.001
L-Cysteine hydrochloride	0.020
L-Tryptophan	0.020
Pyridoxine hydrochloride	0.003
Calcium pantothenate	0.003
Nicotinamide	0.003
Biotin	0.0003
Thiamine hydrochloride	0.00004
Adenine	0.010
Guanine	0.010
Xanthine	0.010
Uracil	0.010
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

The goal of an antimicrobial susceptibility test is to predict through an in vitro assessment the likelihood of successfully treating an infection with a particular antimicrobial agent. There are several continual or novel methods for performing antibacterial susceptibility testing. These include the disk diffusion test, broth micro dilution, agar gradient and rapid automated instrument methods (1). Sensitivity Test Broth, which is used for antimicrobial susceptibility tests, is a semi-defined medium in which the mineral contents have been stabilized to give reproducible results. The thiamine and thymidine content is very low thus making it most suitable for testing antimicrobial activity of sulphonamides.

However some mutant strains which are totally dependent on thiamine and thymidine for their growth, will not grow in Sensitivity Test Broth, due to very low levels of these compounds in the media as they are the naturally occurring antagonist of trimethoprim. These strains should be carefully recognized (2, 3, 4).

Sensitivity Test Broth has been so designed to overcome the problems occurring in Mueller-Hinton Media that are as follows (5-11).

1. Mueller Hinton Agar and Mueller Hinton Broth give different MIC values.

2. Mueller Hinton Agar shows antagonistic effect towards tetracycline.

3. High levels of sulphonamide and trimethoprim antagonists.

4. Media prepared using peptone of different manufacturers give poor reproducibility.

5. Poor growth supporting ability for Streptococci and variable growth rates with gram-positive organisms.

Some pathogenic organisms are nutritionally dependent due to their intrinsic demands for special growth factors.

Casein enzymic hydrolysate, peptic digest of animal tissue, dextrose, and vitamins provides nitrogen, carbon compounds and other essential growth nutrients.

Methodology

Suspend 23.4 grams of dehydrated powder media in 1000 ml distilled water. Mix thoroughly & heat to boil to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Shake well before dispense as desired.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity
Basal medium: Light yellow ; After addition of 5%v/v laked blood : Red to chocolate coloured, Basal medium :clear to slightly opalescent ; After Addition: opalescent solution in tubes

Reaction
Reaction of 2.34% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH Range
7.20-7.60

Cultural Response
DM 1486: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth
Salmonella Typhimurium ATCC 14028	50-100	good-luxuriant
Staphylococcus aureus ATCC 25923	50-100	good-luxuriant
Streptococcus pyogenes ATCC 19615	50-100	good-luxuriant
Enterococcus faecalis ATCC 29212	50-100	good-luxuriant
Bacillus subtilis ATCC 6633	50-100	good-luxuriant
Bacteroides vulgatus ATCC 8482	50-100	good-luxuriant

Storage and Shelf Life

Dried Media: Store dehydrated powder and prepared medium at 2-8°C in tightly closed container. Use before expiry period on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

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