CM 22322 - MUELLER HINTON AGAR PLATE

INTENDED USE

Fordeterminationof susceptibility of microorganisms to antimicrobial agents.

PRODUCT SUMMARY ANDEXPLANATION

MuellerHinton agarisusedforcultivationof*Neisseria* & for determination of susceptibility of microorganisms to antibiotics. It is formulatedbyMuellerandHinton for the primary isolation of *Neisseria* species. Bauer and Kirby recommended this mediumforperformingantibiotic susceptibility tests using a single disc of high concentration. It has become the standard mediumforantimicrobialsusceptibility testing and its performance is in accordance to Clinical and Laboratory Standard Institute(CLSI),formerlyNCCLS and complies with requirements of the WHO, FDA and EUCAST. Mueller Hinton Agar has beenselectedbytheCLSIfor several reasons:

(i) It demonstratesgoodbatch-to-batchreproducibility for susceptible testing,
(ii) It is low in sulfonamide,trimethoprimand tetracycline inhibitors,
(iii) It supports thegrowthofmostnon-fastidious bacterial pathogens and
(iv) Many data andmuchexperienceregarding its performance have been recorded.

WHO Committee on StandardizationofSusceptibility Testing has accepted Mueller Hinton Agar for determining the susceptibility of microorganismsbecauseofitsreproducibility.

The Kirby-Bauer procedureisbasedonagardiffusion of antimicrobial substances impregnated on paper discs. This method employs disc with asingleconcentrationofantimicrobial agent and the zone diameters observed are correlated with minimum inhibitory concentration(MIC)values. A standardized suspension of the organism is swabbed over the entire surface of the medium.Paperdiscsimpregnated with specific amounts of antimicrobial agents are then placed on the surface of the medium,incubatedandzonesof inhibition around each disc are measured. The susceptibility is determined by comparing withCLSIstandards.Thevarious factors, which influence disc diffusion susceptibility tests, are agar depth, disc potency, inoculumconcentration,pH of the medium and beta-lactamase production by test organisms.

COMPOSITION

Ingredients	Gms / Ltr
Agar	17.000
Casein acid hydrolysate	17.500
Beef, infusion	2.000
Starch	1.500

PRINCIPLE

Themedium consistsofBeef infusions and Casein acid hydrolysate which provides nitrogen, vitamins, carbon, and amino acids. Starch is addedtoabsorbany toxic metabolites produced. Agar is the solidifying agent. The thymine/thymidine content of this mediumisminimized (determined by disc diffusion procedure with *Enterococcus faecalis* ATCC 29212 and sulfamethoxazole-trimethoprimantibiotic) and levels of calcium and magnesium are adjusted (determined by *Pseudomonas aeruginosa*ATCC27853 and aminoglycoside antibiotics) to give consistent zones of inhibition as per specified diameters intheCLSIstandards.

INSTRUCTION FORUSE

Eitherstreak,inoculateorsurface spread the test inoculum aseptically on the plate.

QUALITY CONTROL SPECIFICATIONS

Appearance	:	Light amber colour, clear to slightly opalescent gel
Quantity of Medium	:	25ml of medium in 90mm plates.
pH (at 25°C)	:	7.3± 0.2
Sterility Check	:	Passes release criteria

INTERPRETATION

Growth Promotion test

Culturalcharacteristicsobserved after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period
Staphylococcus aureus	25923	50-100	Luxuriant	>=70%	30-35°C	18-24 hours
Escherichia coli	25922	50-100	Luxuriant	>=70%	30-35°C	18-24 hours
Pseudomonas aeruginosa	27853	50-100	Luxuriant	>=70%	30-35°C	18-24 hours
Enterococcus faecalis	29212	50-100	Luxuriant	>=70%	30-35°C	18-24 hours

Antibiotic Susceptibility Test

Cultural characteristicsobserved after inoculating 0.5 McFarland culture (1-2 x 108 CFU/ml) by lawn technique, dispensing antibiotic discs and incubation at 30-35°C for 18 hours. After incubation, inhibition zone diameter measured in mm.

Antibiotics	*Escherichia coli* (ATCC 25922)	*Staphylococcus aureus* (ATCC 25923)	*Pseudomonas aeruginosa* (ATCC 27853)	*Enterococcus faecalis* (ATCC 29212)
	Std.	Std.	Std.	Std.
Amoxicillin (10 mcg)	19-25	28-36	Resistant	-
Ampicillin (10 mcg)	15-22	27-35	Resistant	-
Amoxiclave (10mcg)	18-24	28-36	Resistant	-
Amikacin (30 mcg)	19 - 26	20 - 26	18 - 26	-
Azithromycin (15 mcg)	Resistant	21 - 26	Resistant	-
Cefotaxime	29-35	25-31	18- 22	-
Colistin (Methane Sulphate) (10 mcg)	11 - 17	Resistant	11 - 17	-
Cefaclor (30 mcg)	23 - 27	27 - 31	Resistant	-
Cefoperazone (75 mcg)	28 - 34	24 - 33	23 - 29	-
Cefazolin (30 mcg)	21 - 27	29 - 35	Resistant	-
Cefuroxime (30 mcg)	20 - 26	27 - 35	Resistant	-
Cephalothin (30 mcg)	15 - 21	29 - 37	Resistant	-
Chloramphenicol (30 mcg)	21 - 27	19 - 26	Resistant	-
Ciprofloxacin (5 mcg)	29-37	22 - 30	25 - 33	-
Erythromycin (15 mcg)	Resistant	22 - 30	Resistant	-
Gentamicin (10 mcg)	19 - 26	19 - 27	17 - 23	-

Kanamycin (30 mcg)	17-25	19 - 26	Resistant	-
Norfloxacin (10 mcg)	28 - 35	17 - 28	22 - 29	-
Lomefloxacin (10 mcg)	27 - 33	23 - 29	22 - 28	-
Co-Trimoxazole (25 mcg)	23-29	24-32	Resistant	≥ 20

PACKAGING:

Doubledlayered packing containing 5 No. of plates with one silica gel desiccant bag packed inside it.

STORAGE

On receipt,store the plates at 15–30 °C. Avoid freezing and overheating. Do not open until ready to use. Prepared plates stored in their original sleeve wrapping until just prior to use may be inoculated up to the expiration date and incubated for recommended incubation times. Allow the medium to warm to room temperature before inoculation.
Product Deterioration: Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

DISPOSAL

Afteruse,prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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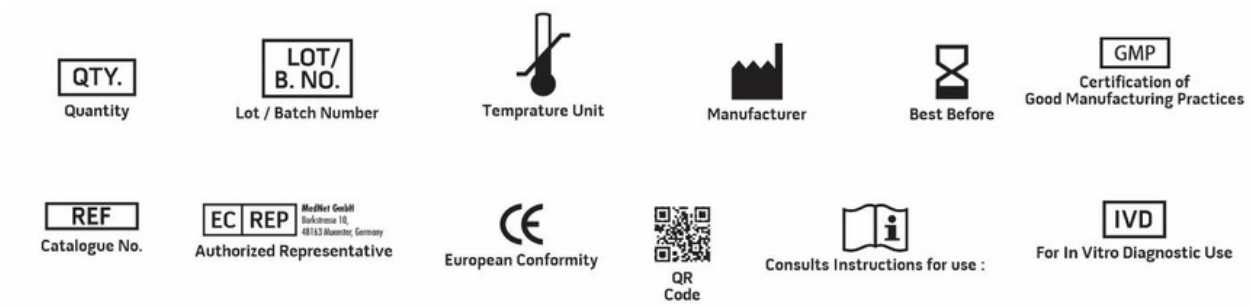

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For LabUse Only**