

IVD in vitro diagnosticum - For professional use only



MUELLER-HINTON Agar

MUELLER-HINTON agar

Cat. No. 1.05437.0500/5000
(500 g, 5 kg)

Merckoplate ® MUELLER-HINTON agar

Cat. No. 1.10414.0001
(20 plates)
Cat . No. 1.13405.0001
(480 Plates)

Media proposed by MUELLER and HINTON (1941) for testing the sensitivity of clinically important pathogens towards antibiotics or sulfonamides.

These culture media comply with the requirements of the WHO (1961, 1977) and DIN Norm 58930. MUELLER-HINTON agar is used for agar diffusion tests while MUELLER-HINTON broth is employed for the determination of the MIC in serial dilution tests.

See also General Instruction of Use

Warnings and precautions see www.merck-chemicals.com

Principle

Microbiological method

Mode of Action

The composition of the culture media provide favourable growth conditions, the media are almost totally devoid of sulfonamide antagonists.

In order to improve the growth of fastidious microorganisms, blood can be added to MUELLER-HINTON agar. According to JENKINS et al. (1985), this may lead to false results when testing the susceptibility of enterococci to aminoglycosides.

MUELLER-HINTON Agar:

Typical Composition (g/litre)

Meat infusion 2.0; casein hydrolysate 17.5; starch 1.5; agar-agar 13.0.

Preparation and Storage

Cat. No. 1.05437. ® MUELLER-HINTON Agar (500 g/5 kg)

Usable up to the expiry date when stored dry and tightly closed at +15 to +25°C. Protect from light.

After first opening of the bottle the content can be used up to the expiry date when stored dry and tightly closed at +15 to +25°C.

Suspend 34.0 g/litre and autoclave (15 min at 121 °C), if required cool to 45-50 °C and add 5-10 % defibrinated blood, pour plates.

pH: 7.4 ± 0.2 at 25 °C.

Without blood, the plates are clear to opalescent and yellowish-brown.

Cat. No. 1.10414.0001 Merckoplate ® MUELLER-HINTON Agar (20 plates, 20 ml each)

Cat. No. 1.13405.0001 Merckoplate ® MUELLER-HINTON Agar (480 plates, 20 ml each)

Ready-to-use

Usable up to the expiry date when stored at +12 to +15°C.

The plates are clear to opalescent and yellowish-brown.

Specimen

e.g. Isolated bacteria from urine, .

Clinical specimen collection, handling and processing , see general instructions of use.

Experimental Procedure and Evaluation

Carry out the sensitivity or resistance test as directed.

Incubation for 24 h at 35 °C aerobically.

Quality control of MUELLER-HINTON Agar

Test discs	Inhibition zone diameter in mm acc. to WHO (revised)			
	TEST STRAINS			
	Esch. coli ATCC 25922	Staph. aureus ATCC 25923	Pseud. aeruginosa ATCC 27853	Enteroc. faecalis ATCC 33186
Ampicillin 10 µg	16-22	27-35	-	-
Tetracyclin 30 µg	18-25	19-28	-	-
Gentamicin 10 µg	19-26	19-27	16-21	-
Polymyxin B 300 IU	12-17	7-13	-	-
Sulfamethoxazole 1.25 µg + Trimethoprim 23.75 µg	24-32	24-32	-	> 20

Quality control of MUELLER-HINTON Broth

Test strains	Growth
Escherichia coli ATCC 25922	good / very good
Staphylococcus aureus ATCC 25923	good / very good
Pseudomonas aeruginosa ATCC 27853	good / very good
Enterococcus faecalis ATCC 33186	good / very good
Bacillus subtilis ATCC 6633	good / very good (Antagonist test!)
Streptococcus pyogenes ATCC 12344	Good / very good
Streptococcus pneumoniae ATCC 6301	fair / good
Listeria monocytogenes ATCC 19118	Fair / good



Literature

BAUER, A.W., KIRBY, W.M.M., SHERRIS, J.C., a. TURCK, M.: Antibiotic susceptibility testing by a standardized single disk method. - **Amer. J. Clin. Pathol.**, **45**: 493-496 (1966).

DIN Deutsches Institut für Normung: Methoden zur Empfindlichkeitsprüfung von bakteriellen Krankheitserregern (außer Mycobakterien) gegen Chemotherapeutika. Agar-Diffusionstest. - **DIN 58940**.

ERICSSON, H.M., a. SHERRIS, J.C.: Antibiotic Sensitivity Testing. Report of an International Collaborative Study. - **Acta path. microbiol.**

scand., B. Suppl., 217; 90 pp (1971).

JENKINS, R.D., STEVENS, S.L., CRAYTHORN, J.M., THOMAS, T.W., GUINAN, M:E., a. MATSEN, J.M.: False susceptibility of enterococci to aminoglycosides with blood-enriched Mueller-Hinton agar for disk susceptibility testing. - **J. Clin. Microbiol., 22;** 369-374 (1985).

MUELLER, H.J., a. HINTON, J.: A protein-free medium for primary isolation of the Gonococcus and Meningococcus. - **Proc. Soc. Expt. Biol. Med., 48;** 330-333 (1941).

World Health Organization: Standardization of methods for conducting microbic sensitivity tests (Technical Report Series No. 210, Geneva 1961).

World Health Organization: Requirements for antibiotic susceptibility tests. I. Agar diffusion tests using antibiotic susceptibility discs. (Technical Report Series No. 610, Geneva 1977).

