

# **EUCAST evaluation of 21 brands of Mueller-Hinton dehydrated media for disk diffusion testing.**

Supplementary material

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# Method and data analysis

- Quality control was performed for 21 brands of dehydrated Mueller-Hinton agar. Plates were prepared in-house and tested blindly and in parallel.
- Disk diffusion was performed according to EUCAST methodology against four QC strains and relevant antimicrobial disks (18 in total). Each disk-strain combination was tested in triplicate.
- Mean values from triplicate tests of each disk-strain combination were evaluated against target and ranges in the EUCAST QC Tables v. 9.0.
- Each mean value was given a negative rating (0, -1, -3 or -5), illustrated in different colours, based on how it related to the respective QC criteria (EUCAST QC Tables v. 9.0):

Rating	Explanation
0	Mean value on target $\pm$ 1 mm
-1	Mean value >1 mm but within $\pm$ 2 mm from target
-3	Mean value >2 mm from target but within QC range
-5	Mean value outside QC range

H = High, mean value > 1 mm above target

L = Low, mean value > 1 mm below target

\* Single reading out of QC range (mean value within range)

# Codes for antimicrobial disks

AMP2	Ampicillin 2 µg
AMP10	Ampicillin 10 µg
CAZ10	Ceftazidime 10 µg
CIP5	Ciprofloxacin 5 µg
CTX5	Cefotaxime 5 µg
ERY 15	Erythromycin 15 µg
FOX30	Cefoxitin 30 µg
GEN10	Gentamicin 10 µg
GEN30	Gentamicin 30 µg
IMI10	Imipenem 10 µg
LIN10	Linezolid 10 µg
MER10	Meropenem 10 µg
NOR10	Norfloxacin 10 µg
PTZ36	Piperacillin-tazobactam 30-6 µg
TET30	Tetracycline 30 µg
TIG15	Tigecycline 15 µg
TOB10	Tobramycin 10 µg
TSU25	Trimethoprim-sulfamethoxazole 1.25-23.75 µg

## S1. Product details for 21 brands of Mueller-Hinton (MH) dehydrated media.

MH agar brand	Manufacturer	Product code	Lot number	Expiry date	Preparation (g/L)
Acumedia MH Agar	Neogen Corporation, Lansing, MI, USA	7101A	108934B	2020-07-31	38.0
Alpha Biosciences MH Agar	Alpha Biosciences, Baltimore, MD, USA	M13-150	803221	2022-03-31	38.0
BD BBL MH II Agar	Becton Dickinson and Company, Sparks, MD, USA	211438	6271796	2020-07-31	38.0
BD Difco MH Agar	Becton Dickinson and Company, Sparks, MD, USA	225250	7348829	2020-03-31	38.0
Biolab MH II Agar	Biolab, Budapest, Hungary	MHT20500	MHT110118124	2021-01-31	38.0
Biolife MH Agar II	Biolife Italiana, Milan, Italy	4017402	GN8413	2021-11-30	38.0
bioMérieux MHE Agar	bioMérieux, Marcy l'Etoile, France	-*	1005941280	2021-12-20	41.74
Bio-Rad MH Agar	Bio-Rad, Marnes-la-Coquette, France	64884	5F2300	2020-06-30	35.0
CRITERION MH Agar	Hardy Diagnostics, Santa Maria, CA, USA	C6421	416154	2021-03-22	38.0
E&O Labs MH Agar	E&O Laboratories, Burnhouse, Scotland, UK	KM0183	00001948	2020-06-30	38.0
HiMedia MH Agar	HiMedia Laboratories, Mumbai, India	M173	0000291432	2022-02-28	38.0
HiMedia MH Agar No. 2	HiMedia Laboratories, Mumbai, India	GM1084	0000328942	2023-02-28	38.0
Lab M MH Agar	Neogen Corporation, Lansing, MI, USA	LAB039	201486/102	2021-04-30	38.0
Mast MH Agar	Mast Group, Merseyside, UK	DM170	408951	2023-04-30	38.0
Merck MH Agar	Merck, Darmstadt, Germany	105437	VM818437806	2023-01-11	34.0
Merck MH Agar acc. to CLSI	Merck, Darmstadt, Germany	105435	FN1382635808	2020-09-30	38.0
Oxoid MH Agar	Oxoid, Basingstoke, UK	CM0337	2148329	2022-05-12	38.0
Remel MH Agar	Remel, Lenexa, KS, USA	R454082	237466	2021-10-18	38.0
Sifin MH Agar	Sifin Diagnostics, Berlin, Germany	TN1162	9331017	2020-09-30	38.0
Sigma MH Agar	Sigma-Aldrich, St. Louis, MO, USA	70191	BCBV4171	2022-05-31	38.0
Sigma MH Agar 2	Sigma-Aldrich, St. Louis, MO, USA	97580	BCBW2625	2022-11-30	38.0

\* This brand can under normal circumstances be obtained only as pre-poured agar plates.

## S2. Results for *Escherichia coli* ATCC 25922

MH agar brand	AMP10	CIP5	CAZ10	CTX5	GEN10	MER10	TIG15	TSU25	Rating <i>E. coli</i>
Acumedia MH Agar							H	H	-2
Alpha Biosciences MH Agar		H				H			-2
BD BBL MH II Agar		H						H	-2
BD Difco MH Agar		H							-1
Biolab MH II Agar			H					L	-6
Biolife MH Agar II								H	-1
bioMérieux MHE Agar			H					H	-2
Bio-Rad MH Agar									0
CRITERION MH Agar		H							-1
E&O Labs MH Agar									0
HiMedia MH Agar		H	H						-2
HiMedia MH Agar No. 2	H				L		H		-3
Lab M MH Agar									0
Mast MH Agar		H							-1
Merck MH Agar		H				H	L		-7
Merck MH Agar acc. to CLSI							H	H	-2
Oxoid MH Agar					L				-1
Remel MH Agar	H	H					H		-5
Sifin MH Agar		H					H	H	-7
Sigma MH Agar		H	H	H	L				-6
Sigma MH Agar 2					L				-3

### S3. Results for *Pseudomonas aeruginosa* ATCC 27853

MH agar brand	CAZ10	GEN10	IMI10	TOB10	PTZ36	MER10	CIP5	Rating <i>P. aerug.</i>
Acumedia MH Agar				H				-1
Alpha Biosciences MH Agar			L					-1
BD BBL MH II Agar		H		H		H	H	-4
BD Difco MH Agar	H			H		H		-3
Biolab MH II Agar	H		H				H	-3
Biolife MH Agar II						H	H	-2
bioMérieux MHE Agar		L						-1
Bio-Rad MH Agar				H				-1
CRITERION MH Agar	H			H				-2
E&O Labs MH Agar						H*	H	-4
HiMedia MH Agar	H	H		H		H		-6
HiMedia MH Agar No. 2	H	H		H		H		-12
Lab M MH Agar		L				H		-2
Mast MH Agar	H	H	H			H	H	-13
Merck MH Agar	H	H			H	H	H	-17
Merck MH Agar acc. to CLSI				H		H		-2
Oxoid MH Agar						H	H	-2
Remel MH Agar				H				-3
Sifin MH Agar				H		H		-2
Sigma MH Agar	H					H		-2
Sigma MH Agar 2	H					H		-4



## S5. Results for *Enterococcus faecalis* ATCC 29212

MH agar brand	AMP2	NOR10	GEN30	LIN10	IMI10	TIG15	TSU25	Rating <i>E. faecalis</i>
Acumedia MH Agar	H		H					-6
Alpha Biosciences MH Agar		H	H				L	-5
BD BBL MH II Agar								0
BD Difco MH Agar			H					-5
Biolab MH II Agar	H				H	H	L	-16
Biolife MH Agar II			H			L		-4
bioMérieux MHE Agar	H		H					-4
Bio-Rad MH Agar			H				L	-2
CRITERION MH Agar			H				L	-4
E&O Labs MH Agar			H*				L	-8
HiMedia MH Agar	H		H		H	H		-6
HiMedia MH Agar No. 2	H		H			H		-9
Lab M MH Agar		L	H			L	L	-16
Mast MH Agar		H	H				L	-9
Merck MH Agar	H	H	H		H	L	L	-22
Merck MH Agar acc. to CLSI	H		H					-6
Oxoid MH Agar								0
Remel MH Agar			H				L	-10
Sifin MH Agar			H					-5
Sigma MH Agar	H				H	H		-3
Sigma MH Agar 2	H							-1

**S6. Combined results for all quality controls tested.**

MH agar brand	Rating				Total
	<i>E. coli</i> ATCC 25922	<i>P. aeruginosa</i> ATCC 27853	<i>S. aureus</i> ATCC 29213	<i>E. faecalis</i> ATCC 29212	
Acumedia MH Agar	-2	-1	-13	-6	-22
Alpha Biosciences MH Agar	-2	-1	-6	-5	-14
BD BBL MH II Agar	-2	-4	-6	0	-12
BD Difco MH Agar	-1	-3	-4	-5	-13
Biolab MH II Agar	-6	-3	-20	-16	-45
Biolife MH Agar II	-1	-2	-3	-4	-10
bioMérieux MHE Agar	-2	-1	-14	-4	-21
Bio-Rad MH Agar	0	-1	-1	-2	-4
CRITERION MH Agar	-1	-2	-5	-4	-12
E&O Labs MH Agar	0	-4	-5	-8	-17
HiMedia MH Agar	-2	-6	-6	-6	-20
HiMedia MH Agar No. 2	-3	-12	-8	-9	-32
Lab M MH Agar	0	-2	-7	-16	-25
Mast MH Agar	-1	-13	-4	-9	-27
Merck MH Agar	-7	-17	-9	-22	-55
Merck MH Agar acc. to CLSI	-2	-2	-15	-6	-25
Oxoid MH Agar	-1	-2	-7	0	-10
Remel MH Agar	-5	-3	-6	-10	-24
Sifin MH Agar	-7	-2	-17	-5	-31
Sigma MH Agar	-6	-2	-7	-3	-18
Sigma MH Agar 2	-3	-4	-3	-1	-11