api® 50 CHB/E Medium

IVD

Bacillus and related genera / *Enterobacteriaceae* and *Vibrionaceae*

SUMMARY AND EXPLANATION

API 50 CHB/E Medium is intended for the identification of *Bacillus* and related genera, as well as Gram-negative rods belonging to the *Enterobacteriaceae* and *Vibrionaceae* families. It is a ready-to-use medium which allows the fermentation of the 49 carbohydrates on the API 50 CH strip to be studied.

PRINCIPLE

A suspension is made in the medium with the microorganism to be tested and each tube of the strip is then inoculated with the suspension. During incubation, the carbohydrates are fermented to acids which produce a decrease in the pH, detected by the change in color of the indicator. The results make up the biochemical profile which is used by the identification software to identify the strain.
The API 20 E strip may be used in association with the API 50 CH strip to provide supplementary tests (optional for *Bacillus* and related genera but essential for *Enterobacteriaceae* and *Vibrionaceae*).

CONTENT OF THE KIT (Kit for 10 tests)

- 10 ampules of API 50 CHB/E Medium
- 1 package insert provided in the kit or downloadable from **www.biomerieux.com/techlib**

COMPOSITION OF THE MEDIUM

API 50 CHB/E Medium 10 ml	Ammonium sulfate	2 g
	Yeast extract	0.5 g
	Tryptone (bovine/porcine origin)	1 g
	Disodium phosphate	3.22 g
	Monopotassium phosphate	0.12 g
	Trace elements	10 ml
	Phenol red	0.17 g
	Demineralized water	1000 ml
	pH 7.4-7.8 at 20-25°C	

The quantities indicated may be adjusted depending on the titer of the raw materials used.

REAGENTS AND MATERIAL REQUIRED BUT NOT PROVIDED

Reagents / Instrumentation for *Bacillus* and related genera :

- API 50 CH strip (Ref. 50 300)
- API 20 E strip (Ref. 20 100)
- API 20 E reagent kit (Ref. 20 120)
- **api*web*™** identification software (Ref. 40 011), ATB ™ instrument or ***mini API*** (consult bioMérieux)
- Mineral oil (Ref. 70 100)
- API NaCl 0.85 % Medium, 5 ml (Ref. 20 230)
- McFarland Standard (Ref. 70 900), point 2 on the scale or DENSIMAT (Ref. 99 234) or ATB Densitometer

Reagents / Instrumentation for *Enterobacteriaceae* and *Vibrionaceae* :

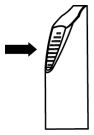
- API 50 CH strip (Ref. 50 300)
- API 20 E strip (Ref. 20 100)
- API 20 E reagent kit (Ref. 20 120)
- **api*web*** identification software (Ref. 40 011), ATB instrument or ***mini API*** (consult bioMérieux)
- Mineral oil (Ref. 70 100)
- API Suspension Medium, 5 ml (Ref. 20 150)
- McFarland Standard (Ref. 70 900), point 0.5 on the scale or DENSIMAT (Ref. 99 234) or ATB Densitometer

Material :

- Pipettes or PSIpettes
- Ampule rack
- Small and large ampule protectors
- Sterile distilled water or sterile saline, 1 ml
- General microbiology laboratory equipment

WARNINGS AND PRECAUTIONS

- **For *in vitro* diagnostic use and microbiological control.**
- **For professional use only.**
- This kit contains products of animal origin. Certified knowledge of the origin and/or sanitary state of the animals does not totally guarantee the absence of transmissible pathogenic agents. It is therefore recommended that these products be treated as potentially infectious, and handled observing the usual safety precautions (do not ingest or inhale).
- All specimens, microbial cultures and inoculated products should be considered infectious and handled appropriately. Aseptic technique and usual precautions for handling the bacterial group studied should be observed throughout this procedure. Refer to "CLSI® M29-A, *Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline* - Current revision". For additional handling precautions, refer to "Biosafety in Microbiological and Biomedical Laboratories - CDC/NIH - Latest edition", or to the regulations currently in use in each country.
- Do not use media past the expiry date.
- Before use, check that the ampules are intact.
- Allow media to come to room temperature before use.
- Open ampules carefully as follows :
  - Place the ampule in the ampule protector.
  - Hold the protected ampule in one hand in a vertical position (white plastic cap uppermost).
  - Press the cap down as far as possible.
  - Position the thumb tip on the striated part of the cap and press forward to snap off the top of the ampule.
  - Take the ampule out of the ampule protector and put the protector aside for subsequent use.
  - Carefully remove the cap.



- The performance data presented were obtained using the procedure indicated in this package insert. Any change or modification in the procedure may affect the results.
- Interpretation of the test results should be made taking into consideration the patient history, the source of the specimen, colonial and microscopic morphology of the strain and, if necessary, the results of any other tests performed, particularly the antimicrobial susceptibility patterns.

STORAGE CONDITIONS

The media should be stored at 2-8°C until the expiry date indicated on the packaging.

SPECIMENS (COLLECTION AND PREPARATION)

API 50 CHB/E Medium is not for use directly with clinical or other specimens.
The microorganisms to be identified must first be isolated on a suitable culture medium according to standard microbiological techniques.

INSTRUCTIONS FOR USE

For *Bacillus*

Selection of the colonies

- Check the purity of the strain.
- Check that it belongs to the *Bacillus* genus : aerobic, spore-forming rod, usually Gram-positive.
- Culture it on a nutrient agar plate.
  - If the optimum growth temperature of the micro-organism is unknown, incubate several plates at different temperatures.
  - For slow growing strains, use two plates so as to have enough bacteria :
    - mesophiles grow at temperatures between 25°C and 45°C during 16-18 hours ;
    - psychrophiles grow at 20°C during 18-48 hours ;
    - thermophiles grow at 55°C during 12-16 hours.
- Growth of *Bacillus lentus* is encouraged by the addition of 1 g of urea/litre into the nutrient agar before sterilization.

Preparation of the strips

See the package inserts for API 50 CH and API 20 E (use optional).

Preparation of the inoculum

The solutions must be used immediately after preparation.

- If the DENSIMAT or ATB ™ Densitometer is used :
  1) Suspension for inoculation of the API 50 CH strip :
     - Open an ampule of API 50 CHB/E Medium as indicated in the paragraph "Warnings and Precautions".
     - Pick up several identical colonies.
     - Prepare a suspension with a turbidity equivalent to 2 McFarland in the ampule of API 50 CHB/E Medium.
  2) Suspension for inoculation of the API 20 E strip :
     - Open an ampule of API NaCl 0.85 % Medium (5 ml) as indicated in the paragraph "Warnings and Precautions".
     - Pick up several identical colonies.
     - Prepare a suspension with a turbidity equivalent to 2 McFarland.
- If the DENSIMAT or ATB Densitometer is not used :
  1) Suspension for inoculation of the API 20 E strip :
     - Open a tube containing 1 ml of sterile saline.
     - Pick up all the bacteria from the culture using a swab.
     - Prepare a heavy suspension (S) in the tube.
     - Open an ampule of API NaCl 0.85 % Medium (5 ml) as indicated in the paragraph "Warnings and Precautions".
     - Prepare a suspension with a turbidity equivalent to 2 McFarland by transferring a certain number of drops of suspension S into the ampule : record this number of drops (n).
  2) Suspension for inoculation of the API 50 CH strip :
     - Open an ampule of API 50 CHB/E Medium as indicated in the paragraph "Warnings and Precautions".
     - Inoculate the ampule of API 50 CHB/E Medium by transferring twice the number of drops of suspension (i.e. 2n) into the ampule.
- Homogenize.

NOTE : If the API 20 E strip is be used in association with the API 50 CH strip, follow the instructions in the API 20 E package insert.

Inoculation of the strips

(see the API 50 CH and API 20 E package inserts)

- Fill the tubes (not the cupules) with the inoculated API 50 CHB/E Medium.
  NOTE : The addition of mineral oil is optional ; it is not however recommended for strict aerobic bacteria.
- Inoculate the first 12 tests only of the API 20 E strip, as the last 8 tests are duplicated on the API 50 CH strip, and inoculate the GLU test to reveal the NIT reaction.

Incubation of the strips

- Incubate :
  - thermophilic species at 55°C ± 2°C for 3 - 3 ½ hours, 6 - 6 ½ hours and 24 hours (± 2 hours), slightly tilting the API 50 CH strip, base of the tubes uppermost, in order to trap any gas produced,
  - other species at 29°C ± 2°C for 24 hours (± 2 hours) and 48 hours (± 6 hours).

NOTE : For the API 20 E strip, the same incubation conditions must be observed.

Reading the strips

(see the API 50 CH and API 20 E package inserts)

- Read the results :
  - for thermophilic species after 3 - 3 ½ hours, 6 - 6 ½ hours and 24 hours (± 2 hours) of incubation,
  - for other species after 24 hours (± 2 hours) and 48 hours (± 6 hours) of incubation.
- For the API 50 CH strip :
  - A positive test corresponds to acidification revealed by the phenol red indicator contained in the medium changing to YELLOW.
  - For the esculin test (tube no. 25), a change in color from red to BLACK is observed.

  NOTE : If a positive test becomes negative at the second reading, only the positive result should be taken into account (this is caused by an alkalinization due to the production of ammonia from peptone).
  - Record the results on the result sheet.

- For the API 20 E strip :
  - The reagents are added just before the last reading.
  - To read the tests, refer to the API 20 E package insert. The results of the first 11 tests and the NIT reaction in the GLU test should be recorded for final interpretation.

Interpretation

The biochemical profile obtained for the strain after the final reading can be identified using the ATB ™ instrument, ***mini API***, or **api*web*** ™ identification software with the database (V4.0).

NOTE :
The biochemical profile may also be :
- used with other results for a taxonomic study.
- recorded as it is, to characterize the strain and to make comparisons.

For *Enterobacteriaceae*

Selection of the colonies

- Check the purity of the strain.
- Culture it on a nutrient medium (Trypcase soy agar for example), and incubate for 18-24 hours at 37°C.
- Check that it belongs to the *Enterobacteriaceae* or *Vibrionaceae* family.

Preparation of the strips

See the API 50 CH and API 20 E package inserts.

Preparation of the inoculum

The solutions must be used immediately after preparation.

- If the DENSIMAT or ATB Densitometer is used :
  - Open an ampule of API 50 CHB/E Medium as indicated in the paragraph "Warnings and Precautions".
  - Pick up several identical colonies.
  - Prepare a suspension with a turbidity equivalent to 0.5 McFarland in the ampule of API 50 CHB/E Medium.
- If the DENSIMAT or ATB Densitometer is not used:
  - Open an ampule of API 50 CHB/E Medium as indicated in the paragraph "Warnings and Precautions".
  - Pick up a few colonies and suspend them in 1 ml of sterile distilled water to obtain a turbidity equivalent to 4 McFarland.
  - Transfer this suspension into the ampule of API 50 CHB/E Medium.
- Homogenize.
- Prepare the inoculum to be used for the inoculation of the API 20 E strip as indicated in the API 20 E package insert.

Inoculation of the strips

(see the API 50 CH and API 20 E package inserts)

- Fill the tubes (not the cupules) with the inoculated API 50 CHB/E Medium, and cover all the tests with mineral oil.
- Inoculate the first 11 tests of the API 20 E strip.

Incubation of the strips

- Incubate aerobically at 36°C ± 2°C for 24 hours (± 2 hours) and 48 hours (± 6 hours).

Reading the strips

(see the API 50 CH and API 20 E package inserts)

- Read after 24 hours (± 2 hours) and 48 hours (± 6 hours) of incubation.
- For the API 50 CH strip :
  - A positive test corresponds to acidification revealed by the phenol red indicator contained in the medium changing to YELLOW.
  - For the esculin test (tube no. 25), a change in color from red to BLACK is observed.

  NOTE : If a positive test becomes negative at the second reading, only the positive result should be taken into account (this is caused by an alkalinization due to the production of ammonia from peptone).
  - Record the results on the result sheets.
- For the API 20 E strip :
  - The reagents are added just before the last reading.
  - To read the tests, refer to the API 20 E package insert. The results of the first 11 tests should be recorded for final interpretation.

Interpretation

The biochemical profile obtained for the strain after the final reading can be identified using the ATB instrument, ***mini API***, or **api*web*** identification software with the database (V3.1).

NOTE :
The biochemical profile may also be :
- used with other results for a taxonomic study.
- recorded as it is, to characterize the strain and to make comparisons.

QUALITY CONTROL

The media and strips are systematically controlled at various stages of their manufacture. For those users who wish to perform their own quality control tests with the strip, the following strains may be used :

For *Bacillus* : ***Paenibacillus polymyxa*** **ATCC® 43865**

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
24	-	+	-	-	+	+	+	-	-	V	+	+	+	+	-	V	-	-	+	-	-	+	-	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	-	+	+	-	-	-	-	-	-	-	-	-
48	-	+	-	-	+	+	+	-	-	+	+	+	+	+	-	V	-	-	+	-	-	+	-	+	+	+	+	+	+	+	+	+	+	V	+	+	+	+	-	+	+	-	-	-	-	-	-	-	-	-

Results obtained after incubation at 30°C.

For *Enterobacteriaceae* : preferably **1. *Klebsiella pneumoniae* ssp *pneumoniae* ATCC 35657** or else :

2. *Providencia alcalifaciens* ATCC 9886

		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
1.	24	–	+	–	–	+	+	+	–	+	–	+	+	+	+	–	+	–	+	+	+	–	+	+	–	+	+	+	+	+	+	+	+	+	–	+	+	–	–	+	–	–	–	–	+	+	–	+	+	–
	48	–	+	–	V	+	+	+	–	+	–	+	+	+	+	–	+	–	+	+	+	–	+	+	V	+	+	+	+	+	+	+	+	+	–	–	+	+	–	–	+	V	–	–	–	+	+	–	+	+	–
2.	24	–	–	–	–	–	+	–	–	+	–	–	+	+	+	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	V	+	–	–
	48	–	V	–	–	–	+	–	–	+	–	–	+	+	+	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+	+	–	–

ATCC : American Type Culture Collection, 10801 University Boulevard, Manassas, VA 20110-2209, USA.

It is the responsibility of the user to perform Quality Control in accordance with any local applicable regulations.

LIMITATIONS OF THE METHOD

- The API 50 CHB/E system is intended uniquely for the identification of those species included in the database (see Identification Tables at the end of this package insert). It cannot be used to identify any other microorganisms or to exclude their presence.
- Only pure cultures of a single organism should be used.

RANGE OF EXPECTED RESULTS

Consult the Identification Tables at the end of this package insert for the range of expected results for the various biochemical reactions.

PERFORMANCE

- For *Bacillus* and related genera
  1378 collection strains and strains of various origins belonging to species included in the database were tested :
  - 91.1% of the strains were correctly identified (with or without supplementary tests).
  - 3.9% of the strains were not identified.
  - 5.0% of the strains were misidentified.
- For *Enterobacteriaceae* and *Vibrionaceae*
  2930 collection strains and strains of various origins belonging to species included in the database were tested :
  - 93.93% of the strains were correctly identified (with or without supplementary tests).
  - 4.47% of the strains were not identified.
  - 1.60% of the strains were misidentified.

WASTE DISPOSAL

Dispose of used or unused reagents as well as any other contaminated disposable materials following procedures for infectious or potentially infectious products.
It is the responsibility of each laboratory to handle waste and effluents produced according to their type and degree of hazardousness and to treat and dispose of them (or have them treated and disposed of) in accordance with any applicable regulations.

WARRANTY

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CE

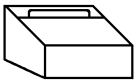
METHODOLOGIE / PROCEDURE / METHODIK / TECNICA / PROCEDIMENTO / ΔΙΑΔΙΚΑΣΙΑ / METOD / METODYKA

Bacillus

Bacillus et genres apparentés
Bacillus and related genera
Bacillus und verwandte Gattungen
Bacillus y géneros próximos
Bacillus e generi affini
Bacillus e géneros semelhantes
Bacillus και σχετικά γένη
Bacillus och närstående släkten
Bacillus og relaterede genera
Bacillus i rodzaje spokrewnione

16:00-18:00 25-45°C
ou / or / oder / o / ή / eller / lub
18:00-48:00 20°C
ou / or / oder / o/ ή / eller / lub
12:00-16:00 55°C

ou / or / oder / o / ή / eller / lub



S

Toute la culture
All the culture
Alle Keime
Todo el cultivo
Tutta la coltura
Toda a cultura
Όλη η καλλιέργεια
Hela kulturen
Alle bakterier
Całość hodowli

Eau physiologique stérile
Sterile saline
Sterile Kochsalzlösung
Agua fisiológica estéril
Soluzione fisiologica sterile
Soro fisiológico estéril
Στείρος φυσιολογικός ορός
Steril fysiologisk koksaltlösning
Sterilt saltvand
Jałowa sól fizjologiczna
1 ml

n◆

2n◆

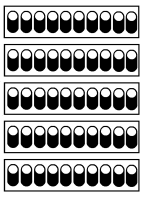
2 McF

API NaCl 0.85 %
Medium 5 ml

API 50 CHB/E
Medium

API NaCl 0.85 %
Medium 5 ml

API 20 E



API 50 CH

API 20 E

facultatif
facultative
fakultativ
facultativo
facoltativo
δυνητικά
facultative
do wyboru

24:00±2:00 + 48:00±6:00 29°C±2°C
ou / or / oder / o / ή / eller / lub
3:00-3:30 + 6:00-6:30 + 24:00±2:00 55°C±2°C

API 20 E

TDA : **TDA**
IND : **JAMES (IND)**
VP : **VP 1 + VP 2**
GLU (NO_2) : **NIT 1 + NIT 2 (+Zn)**

+ - + - + -

METHODOLOGIE / PROCEDURE / METHODIK / TECNICA / PROCEDIMENTO / ΔΙΑΔΙΚΑΣΙΑ / METOD / METODYKA

Enterobacteriaceae

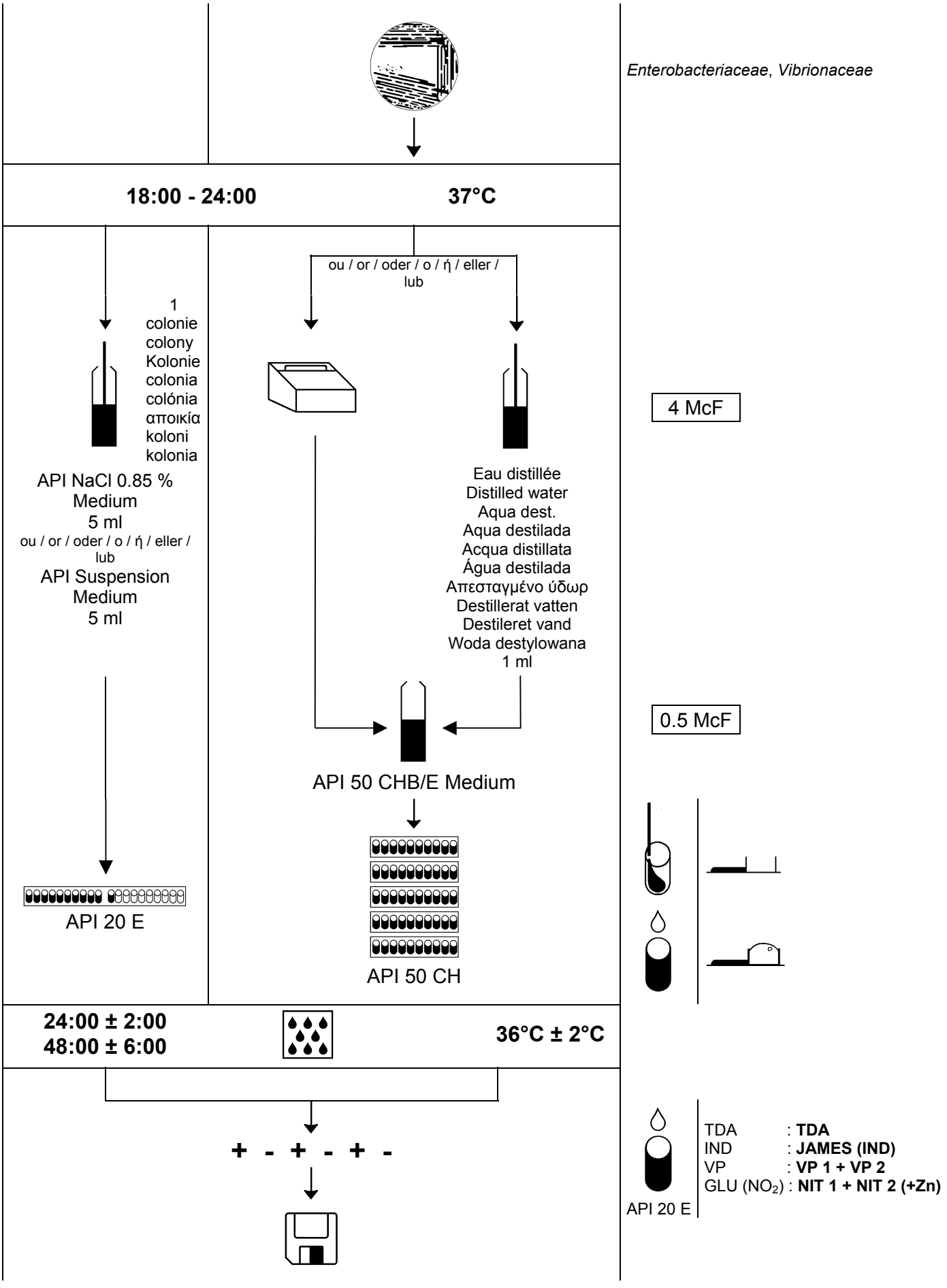


TABLEAU D'IDENTIFICATION / IDENTIFICATION TABLE / PROZENTTABELLE / TABLA DE IDENTIFICACION / TABELLA DI IDENTIFICAZIONE / QUADRO DE IDENTIFICAÇÃO / ΠΙΝΑΚΑΣ ΤΑΥΤΟΠΟΙΗΣΗΣ / IDENTIFIERINGSTABELL / IDENTIFIKATIONSTABEL / TABELA IDENTYFIKACYJNA

Bacillus

% de réactions positives dans les conditions d'incubation précisées à droite du tableau / % of positive reactions in the incubation conditions specified on the right-hand side of the table / % der positiven Reaktionen unter den in der Tabelle angegebenen Inkubationsbedingungen / % de las reacciones positivas en las condiciones de incubación indicadas a continuación / % di reazioni positive nelle condizioni di incubazione sotto indicate / % das reacções positivas nas condições de incubação indicadas aqui abaixo / % θετικών αντιδράσεων στις συνθήκες επώασης που ορίζονται στη δεξιά πλευρά του πίνακα /% positiva reaktioner under de inkubationsförhållanden som anges i tabellens högra kant / % positive reaktioner under inkubationsbetingelser som specificeret i tabellens højre side / % pozytywnych reakcji po inkubacji w warunkach określonych po prawej stronie tabeli

API 50 CHB V4.0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	0	GLY	ERY	DARA	LARA	RIB	DXYL	LXYL	ADO	MDX	GAL	GLU	FRU	MNE	SBE	RHA	DUL	INO	MAN	SOR	MDM	MDG	NAG	AMY	ARB	ESC	SAL	CEL	MAL	LAC	MEL	SAC	TRE
Aneurinibacillus aneurinilyticus	0	50	0	0	9	33	9	0	0	0	33	33	33	9	0	0	0	0	9	0	9	0	9	9	9	9	9	9	9	33	9	33	9
Bacillus anthracis	0	49	1	0	1	99	1	0	0	0	0	100	79	2	0	0	0	1	0	1	0	0	99	0	79	97	33	71	99	1	1	99	99
Bacillus cereus 1	0	74	0	1	1	99	1	0	0	1	8	100	99	26	0	1	0	1	1	1	1	3	97	30	99	99	88	88	100	3	1	55	99
Bacillus cereus 2	0	11	1	0	0	77	1	0	0	0	3	100	99	1	0	0	0	0	0	0	0	0	99	0	43	68	24	2	100	10	0	74	97
Bacillus circulans	0	48	0	18	96	80	98	1	1	68	94	100	97	97	1	45	1	20	89	20	32	64	84	99	96	100	99	99	99	92	92	99	99
Bacillus coagulans	0	71	0	4	47	66	52	0	1	1	98	100	100	98	1	42	1	9	28	38	4	66	100	71	76	83	76	76	100	66	100	95	98
Bacillus firmus	0	41	0	0	4	20	7	0	0	0	1	88	50	11	0	0	0	1	66	2	0	2	63	1	4	55	1	11	92	1	1	77	58
Bacillus lentus	0	40	0	1	50	55	10	0	0	10	55	95	95	95	0	40	17	1	60	17	1	35	82	65	82	98	75	75	98	82	55	82	82
Bacillus licheniformis	0	90	1	1	99	97	87	1	1	1	75	100	100	99	8	32	1	69	99	92	1	99	62	99	99	100	99	99	100	44	26	99	99
Bacillus megaterium	0	80	1	1	87	86	76	1	1	1	82	100	99	28	1	8	1	55	97	39	3	30	87	73	80	97	84	83	99	76	90	98	99
Bacillus mycoides	0	20	0	0	1	98	1	0	0	0	28	100	99	4	0	0	0	1	4	1	0	1	99	12	80	77	80	31	98	20	1	57	98
Bacillus pumilus	0	72	1	1	88	97	65	0	0	0	49	99	100	99	1	14	1	11	99	2	37	27	64	62	98	100	99	99	35	14	15	99	99
Bacillus smithii	0	89	0	0	36	97	97	0	0	0	36	100	100	75	0	45	0	2	100	2	0	89	0	0	2	24	10	24	100	0	10	54	100
B. subtilis / B. amyloliquefaciens	0	77	0	0	84	91	56	0	0	0	12	95	98	87	1	1	1	65	95	86	0	83	29	70	80	100	86	97	98	23	48	90	88
Bacillus non reactive *	0	1	1	0	1	1	2	0	1	1	2	6	10	2	1	1	0	2	9	1	1	1	24	1	1	19	1	1	5	2	1	6	5
Brevibacillus agri	0	21	0	0	0	0	0	0	0	0	0	42	42	0	0	0	0	21	94	0	0	0	0	0	0	5	0	0	0	0	0	0	21
Brevibacillus laterosporus	0	72	0	0	1	61	20	0	0	0	0	98	98	66	0	1	0	1	61	5	0	1	98	38	88	94	79	66	88	0	0	5	98
Brevibacillus non reactive **	0	13	0	0	1	8	2	0	0	1	0	23	19	1	0	1	1	3	22	1	0	1	6	1	2	37	2	5	6	1	0	5	8
Geobacillus stearothermophilus	0	45	0	0	4	17	1	0	0	0	25	100	98	98	1	0	1	1	10	4	0	50	4	1	4	30	25	17	100	10	55	95	75
Geobacillus thermoglucosidiasus	0	36	0	0	47	68	73	0	0	0	31	100	95	95	0	63	0	4	63	26	0	63	73	31	31	89	42	63	100	0	10	73	100
Paenibacillus alvei	0	100	0	0	0	100	0	0	96	0	28	87	3	28	0	0	0	40	0	0	0	50	96	71	87	100	87	50	100	0	50	40	28
Paenibacillus amylolyticus	0	26	0	0	84	84	100	0	0	93	100	100	100	100	0	53	0	1	99	0	46	100	93	100	100	100	100	100	100	100	100	100	100
Paenibacillus glucanolyticus	0	61	0	38	100	100	99	11	0	72	88	88	100	88	0	29	11	14	94	11	20	94	100	100	100	100	100	100	100	100	100	100	100
Paenibacillus lautus	0	73	0	46	100	93	100	0	26	66	100	100	100	99	0	0	6	6	99	6	6	98	100	100	100	100	100	100	100	100	100	100	98
Paenibacillus macerans	0	77	0	51	99	82	99	1	1	82	100	100	100	99	0	58	0	11	93	22	22	77	40	97	99	100	97	99	100	100	100	100	100
Paenibacillus polymyxa	0	83	0	2	93	100	97	0	0	83	97	100	99	97	0	2	0	1	99	0	6	71	46	100	100	100	100	99	100	97	100	100	100
Paenibacillus thiaminolyticus	0	94	0	0	0	87	0	0	22	0	100	100	94	94	0	0	0	58	0	0	35	70	70	87	98	98	98	87	100	94	70	94	87
Paenibacillus validus	0	93	0	0	6	100	93	0	0	6	100	100	100	43	0	0	85	100	100	6	0	100	0	0	0	100	0	25	100	6	25	100	100
Virgibacillus pantothenticus	0	55	0	44	0	88	0	0	0	0	98	100	100	98	0	79	0	20	0	50	1	100	100	88	100	100	100	38	100	20	0	94	100

API 50 CHB V4.0	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	API 20 E													
	INU	MLZ	RAF	AMD	GLYG	XLT	GEN	TUR	LYX	TAG	DFUC	LFUC	DARL	LARL	GNT	2KG	5KG	ONPG	ADH	LDC	ODC	CIT	H2S	URE	TDA	IND	VP	GEL	NIT	TEMP	INCUB
Aneurinibacillus aneurinilyticus	0	0	9	0	0	0	9	0	0	9	0	0	0	0	0	0	0	9	9	0	0	66	0	9	0	0	9	9	90	29°	48 h
Bacillus anthracis	1	1	1	51	84	0	1	1	0	1	0	1	0	1	14	0	2	1	1	1	1	31	1	1	1	0	26	98	78	29°	48 h
Bacillus cereus 1	1	1	2	83	77	1	3	2	1	0	0	1	0	1	47	0	1	4	71	1	1	28	1	2	1	1	43	98	74	29°	48 h
Bacillus cereus 2	0	0	0	65	63	0	0	1	0	0	0	1	0	0	20	0	0	1	52	1	1	54	1	2	1	1	30	99	61	29°	48 h
Bacillus circulans	52	50	96	99	92	26	98	85	1	1	1	21	21	10	61	11	8	87	1	1	1	4	1	1	1	1	28	15	13	29°	48 h
Bacillus coagulans	1	1	61	95	23	0	61	61	0	0	0	1	57	0	61	4	0	73	19	1	1	1	1	1	1	1	57	1	17	29°	48 h
Bacillus firmus	1	0	1	48	3	0	1	0	0	1	0	0	0	0	7	0	0	18	4	1	2	13	1	2	1	2	39	48	70	29°	48 h
Bacillus lentus	25	30	75	75	55	0	50	40	0	10	0	0	4	0	1	0	0	98	0	1	0	25	0	30	0	0	25	40	60	29°	48 h
Bacillus licheniformis	50	1	44	99	87	1	60	75	1	91	1	1	1	1	39	0	0	99	91	1	1	48	1	15	1	1	83	86	68	29°	48 h
Bacillus megaterium	60	49	89	94	95	11	81	73	0	1	0	1	11	0	4	0	1	92	1	1	1	11	1	1	1	1	40	95	15	29°	48 h
Bacillus mycoides	1	1	1	99	99	0	0	4	1	0	0	0	0	0	12	0	0	27	48	1	1	34	1	1	1	1	55	89	68	29°	48 h
Bacillus pumilus	1	0	15	1	1	1	67	31	3	90	1	1	0	0	1	1	0	99	1	1	1	40	1	1	1	1	86	95	2	29°	48 h
Bacillus smithii	0	0	0	0	0	0	0	54	0	0	0	0	24	0	10	0	0	1	1	1	1	3	1	1	1	1	3	85	3	55°	16/24h
B. subtilis / B. amyloliquefaciens	58	0	62	78	79	1	52	50	0	0	1	1	1	0	7	0	0	73	1	1	1	44	1	2	1	1	90	99	57	29°	48 h
Bacillus non reactive *	2	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	1	12	1	1	1	23	1	32	1	1	17	49	18	29°	48 h
Brevibacillus agri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	0	0	0	0	94	100	0	29°	48 h
Brevibacillus laterosporus	0	0	0	5	11	0	12	0	0	1	0	0	0	0	1	0	0	1	1	0	0	11	0	1	0	5	66	66	42	29°	48 h
Brevibacillus non reactive **	1	0	2	1	1	1	1	1	0	1	1	0	1	0	0	0	1	19	7	1	1	15	1	9	1	1	40	41	39	29°	48 h
Geobacillus stearothermophilus	0	75	55	95	82	0	4	50	1	4	0	0	0	0	0	0	1	10	1	1	1	1	1	1	1	1	10	57	11	55°	6/24h
Geobacillus thermoglucosidiasus	0	1	10	52	0	0	31	73	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	27	99	66	55°	16/24h
Paenibacillus alvei	0	0	40	50	28	0	40	28	0	0	0	0	0	0	12	0	0	87	0	0	0	0	0	12	0	100	96	3	1	29°	48 h
Paenibacillus amylolyticus	6	53	100	100	100	0	100	100	0	0	0	6	0	0	0	0	0	99	1	1	1	1	1	8	1	1	30	2	69	29°	48 h
Paenibacillus glucanolyticus	55	75	100	99	99	5	100	100	0	0	0	27	0	0	27	0	1	91	1	1	1	1	1	5	1	1	1	12	35	29°	48 h
Paenibacillus lautus	33	53	100	99	93	6	100	97	0	6	0	40	6	0	53	0	0	99	7	1	1	1	1	7	1	1	64	1	8	29°	48 h
Paenibacillus macerans	88	62	99	99	99	5	97	93	1	0	0	37	51	0	74	1	3	93	1	1	1	1	1	1	1	1	76	30	12	29°	48 h
Paenibacillus polymyxa	69	22	99	99	93	0	97	99	0	0	0	2	0	0	35	0	1	97	2	1	1	2	6	1	1	1	56	70	37	29°	48 h
Paenibacillus thiaminolyticus	0	77	70	87	70	0	87	94	0	0	0	47	0	0	58	0	0	71	7	1	1	1	71	92	1	92	1	71	42	29°	48 h
Paenibacillus validus	50	0	43	68	68	6	6	100	0	25	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	98	0	62	29°	48 h
Virgibacillus pantothenticus	0	0	0	98	5	0	27	66	0	98	0	61	0	0	33	0	0	22	5	1	1	29	12	1	1	1	1	70	25	29°	48 h

* *Bacillus* non réactif / *Bacillus* non reactive / *Bacillus* nicht reaktiv / *Bacillus* no reactivo / *Bacillus* non reattivo / *Bacillus* não reactivo / *Bacillus* μη ενεργό / icke reaktiv *Bacillus* / *Bacillus* ikke reaktiv / *Bacillus* nie dający reakcji = *Bacillus sphaericus / fusiformis / badius*

** *Brevibacillus* non réactif / *Brevibacillus* non reactive / *Brevibacillus* nicht reaktiv / *Brevibacillus* no reactivo / *Brevibacillus* non reattivo / *Brevibacillus* não reactivo / *Brevibacillus* μη ενεργό / icke reaktiv *Brevibacillus* / *Brevibacillus* ikke reaktiv / *Brevibacillus* nie dający reakcji = *Brevibacillus choshinensis / centrosporus / borstelensis / brevis*

TABLEAU D'IDENTIFICATION / IDENTIFICATION TABLE / PROZENTTABELLE / TABLA DE IDENTIFICACION / TABELLA DI IDENTIFICAZIONE / QUADRO DE IDENTIFICAÇÃO / ΠΙΝΑΚΑΣ ΤΑΥΤΟΠΟΙΗΣΗΣ / IDENTIFIERINGSTABELL / IDENTIFIKATIONSTABEL / TABELA IDENTYFIKACYJNA

Enterobacteriaceae

% de réactions positives après 48 H (± 6 H) à 36°C ± 2°C / % of positive reactions after 48 hrs. (± 6 hrs.) at 36°C ± 2°C / % der positiven Reaktionen nach 48 Std. (± 6 Std.) bei 36°C ± 2°C /
% de las reacciones positivas después de 48 H (± 6 H) à 36°C ± 2°C / % di reazioni positive dopo 48 ore (± 6 ore) a 36°C ± 2°C / % das reacções positivas após 48 H (± 6 H) a 36°C ± 2°C /
% θετικών αντιδράσεων μετά από 48 ώρες (± 6 ώρες) στους 36°C ± 2°C / % positiva reaktioner efter 48 tim. (± 6 tim.) vid 36°C C ± 2°C / % positive reaktioner efter 48 timer (± 6 timer) ved 36°C ± 2°C /
% pozytywnych reakcji po 48 godzinach (± 6 godz.) w 36°C ± 2°C

API 50 CHE V3.1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	API 20 E												
	0	GLY	ERY	DARA	LARA	RIB	DXYL	LXYL	ADO	MDX	GAL	GLU	FRU	MNE	SBE	RHA	DUL	INO	MAN	SOR	MDM	MDG	NAG	AMY	ARB	ESC	SAL	CEL	MAL	LAC	MEL	SAC	TRE	INU	MLZ	RAF	AMD	GLYG	XLT	GEN	TUR	LYX	TAG	DFUC	LFUC	DARL	LARL	GNT	2KG	5KG	ONPG	ADH	LDC	ODC	CIT	H2S	URE	TDA	IND	VP	GEL
Aeromonas caviae	0	**84**	0	0	**90**	**95**	0	0	0	0	**100**	**100**	**100**	**81**	0	1	0	0	**100**	1	0	1	**100**	0	**99**	**100**	**98**	**90**	**100**	**66**	1	**99**	**100**	0	0	1	**100**	**84**	0	15	1	0	0	0	13	0	0	**93**	0	1	**99**	**87**	1	0	**26**	0	0	0	**75**	1	**79**
Aeromonas hydrophila	0	**98**	0	1	**76**	**97**	1	0	0	0	**99**	**99**	**99**	**80**	0	5	0	1	**99**	19	0	**33**	**100**	1	**84**	**87**	**69**	**53**	**99**	**41**	1	**88**	**99**	0	1	1	**99**	**99**	0	14	1	0	0	0	9	0	1	**97**	1	1	**99**	**86**	25	1	**28**	0	0	0	**84**	**43**	**86**
Aeromonas salmonicida ssp *salmonicida*	0	**89**	0	0	0	**100**	0	0	0	0	**100**	**100**	**100**	0	0	0	0	0	**100**	0	0	**95**	**100**	0	**100**	**100**	2	0	**100**	2	0	1	**52**	0	0	0	**100**	**100**	0	0	0	0	0	0	0	0	0	**100**	0	1	1	**80**	1	0	0	0	0	1	0	**95**
Aeromonas sobria	0	**100**	0	0	1	**99**	0	0	0	0	**100**	**100**	**100**	**100**	0	3	0	0	**99**	0	0	**50**	**100**	1	1	1	0	**71**	**100**	6	3	**93**	**100**	1	0	3	**100**	**100**	0	0	1	0	0	0	23	0	0	**100**	0	0	**99**	**99**	**81**	0	**73**	0	0	0	**76**	**68**	**99**
Buttiauxella agrestis	0	**97**	0	**58**	**100**	**99**	**100**	0	0	0	**100**	**100**	**100**	**100**	**9**	**100**	**2**	0	**100**	0	0	**25**	**99**	**25**	**100**	**100**	**100**	**100**	**99**	**100**	**99**	**22**	**100**	0	0	**75**	**25**	0	0	**100**	1	1	0	0	**25**	1	0	**100**	**99**	**50**	**100**	0	0	**80**	**50**	0	0	0	0	0	0
Cedecea davisae	0	**71**	0	0	0	**100**	**100**	0	0	0	**100**	**100**	**100**	**100**	0	0	0	**25**	**100**	0	0	**10**	**100**	**43**	**100**	**90**	**99**	**100**	**100**	1	0	**100**	**100**	0	0	5	0	0	0	**100**	2	0	0	0	0	**100**	0	**86**	**86**	**14**	**99**	**90**	0	**99**	**98**	0	0	0	0	**99**	0
Cedecea lapagei/neteri	0	**100**	0	0	1	**100**	**38**	0	0	0	**100**	**100**	**100**	**100**	0	0	0	**25**	**99**	**30**	0	0	**100**	**23**	**99**	**100**	**100**	**100**	**99**	**90**	1	**30**	**100**	0	0	0	8	0	0	**100**	0	0	8	0	0	**99**	0	**90**	**90**	0	**99**	**95**	0	0	**99**	0	0	0	0	**85**	0
Citrobacter amalonaticus	0	**97**	0	**97**	**100**	**100**	**100**	0	0	0	**100**	**100**	**100**	**100**	**95**	**100**	**1**	**1**	**100**	**100**	0	**1**	**100**	**1**	**97**	**1**	**89**	**100**	**100**	**63**	**5**	**1**	**100**	0	0	0	**10**	**1**	0	**100**	0	0	0	0	**97**	0	0	**100**	**100**	**99**	**99**	**24**	0	**100**	**96**	0	**1**	0	**99**	0	0
Citrobacter braakii	0	**100**	0	**100**	**100**	**100**	**99**	0	0	0	**100**	**100**	**100**	**100**	**20**	**100**	**62**	**4**	**100**	**100**	0	**71**	**100**	0	**1**	0	0	**99**	**99**	**51**	**99**	**4**	**100**	0	0	**17**	**1**	0	0	**98**	1	**25**	0	0	**98**	0	0	**100**	**100**	**99**	**51**	**45**	0	**92**	**82**	**80**	1	0	1	0	0
Citrobacter farmeri	0	**100**	0	**100**	**100**	**100**	**100**	0	0	0	**100**	**100**	**100**	**100**	**100**	**100**	0	0	**100**	**100**	0	**99**	**100**	**6**	**100**	**50**	**93**	**100**	**100**	**100**	**100**	**100**	**100**	0	0	**100**	0	0	0	**100**	0	0	**27**	0	**100**	**6**	0	**100**	**100**	**100**	**99**	**27**	0	**100**	1	0	1	0	**99**	0	0
Citrobacter freundii	0	**100**	0	**84**	**100**	**100**	**99**	0	0	0	**100**	**100**	**100**	**100**	**91**	**100**	**15**	**99**	**100**	**100**	0	**8**	**100**	0	**15**	0	**3**	**99**	**99**	**99**	**84**	**96**	**100**	1	0	**72**	1	1	0	**91**	0	**19**	3	0	**99**	1	0	**100**	**96**	**100**	**99**	**61**	0	1	**96**	**72**	1	0	1	0	0
Citrobacter koseri	0	**100**	0	**50**	**100**	**100**	**99**	0	**99**	0	**100**	**100**	**100**	**100**	0	**99**	**50**	**50**	**100**	**100**	0	**99**	**100**	1	**99**	**17**	**80**	**100**	**100**	**99**	0	**17**	**100**	0	0	0	1	0	0	**100**	0	**50**	0	0	**100**	**100**	0	**100**	**100**	**100**	**100**	**75**	0	**100**	**99**	0	1	0	**100**	0	0
Citrobacter youngae	0	**100**	0	**100**	**100**	**100**	**100**	0	0	0	**100**	**100**	**100**	**100**	**100**	**100**	**94**	0	**100**	**100**	0	0	**100**	0	0	0	**5**	**93**	**100**	**78**	0	0	**100**	0	0	0	0	0	0	**78**	0	**1**	0	0	**100**	0	0	**100**	**94**	**100**	**100**	**91**	0	**1**	**99**	**94**	0	0	**1**	0	0
Edwardsiella hoshinae	0	**67**	0	0	1	**100**	0	0	0	0	**100**	**100**	**100**	**100**	0	0	0	0	**80**	0	0	0	**100**	0	0	1	**10**	0	**99**	0	0	**100**	**100**	0	0	0	0	1	0	0	0	0	0	0	**100**	0	0	**100**	0	0	0	0	**100**	**99**	1	**99**	0	0	**99**	0	0
Edwardsiella tarda	0	**99**	0	0	**50**	**100**	0	0	0	0	**100**	**100**	**100**	**99**	0	0	0	0	**10**	0	0	0	**100**	0	0	0	0	0	**100**	0	0	**10**	0	0	0	0	**10**	0	0	0	0	0	0	0	**100**	0	0	**100**	0	0	0	0	**100**	**99**	1	**75**	0	0	**99**	0	0
Enterobacter aerogenes	0	**100**	0	1	**100**	**100**	**100**	0	**99**	0	**100**	**100**	**100**	**100**	0	**100**	**25**	**100**	**100**	**100**	0	**75**	**99**	**33**	**100**	**100**	**100**	**100**	**99**	**100**	**100**	**100**	**100**	0	0	**100**	**33**	0	0	**100**	**67**	0	**67**	1	**33**	**100**	0	**67**	**67**	**67**	**98**	0	**99**	**99**	**60**	0	1	0	0	**75**	0
Enterobacter amnigenus 1	0	**60**	0	0	**100**	**92**	**100**	0	0	0	**100**	**100**	**100**	**100**	0	**100**	0	1	**100**	**7**	0	**99**	**100**	0	**99**	**94**	**99**	**100**	**99**	**99**	**94**	**99**	**100**	0	0	**99**	1	0	0	**99**	1	**12**	0	0	2	0	0	**99**	**96**	2	**99**	**44**	0	**92**	**60**	0	0	0	0	**76**	0
Enterobacter amnigenus 2	0	**93**	0	0	**100**	**99**	**100**	0	0	0	**100**	**100**	**100**	**100**	0	**100**	0	1	**100**	**99**	0	**99**	**100**	0	**93**	**93**	**72**	**100**	**99**	**72**	**93**	1	**100**	0	0	1	**6**	0	0	**99**	1	1	0	0	6	0	0	**93**	**50**	1	**93**	**72**	0	**93**	**72**	0	0	0	**93**	0
Enterobacter asburiae	0	**98**	0	0	**100**	**100**	**99**	0	0	0	**100**	**100**	**100**	**100**	0	1	0	**66**	**99**	**100**	0	**100**	**100**	1	**100**	**99**	**100**	**100**	**100**	**98**	0	**100**	**100**	0	0	**90**	**6**	0	0	**100**	1	1	0	0	0	0	0	**100**	**100**	0	**100**	**14**	0	**99**	**99**	0	0	0	0	2	0
Enterobacter cancerogenus	0	**91**	0	**80**	**100**	**100**	**100**	0	0	0	**100**	**100**	**100**	**100**	0	**100**	0	0	**100**	1	0	1	**100**	0	**99**	**90**	**95**	**100**	**100**	**50**	0	0	**100**	0	0	0	1	0	0	**100**	0	0	0	0	**95**	0	0	**99**	**100**	0	**100**	**91**	0	**99**	**99**	0	0	0	0	**99**	0
Enterobacter cloacae	0	**85**	1	**45**	**99**	**99**	**98**	1	**20**	0	**100**	**100**	**100**	**100**	1	**91**	**11**	**40**	**99**	**91**	0	**93**	**100**	**7**	**98**	**65**	**82**	**99**	**99**	**91**	**92**	**96**	**100**	0	1	**96**	**10**	0	0	**99**	**8**	**18**	1	1	**49**	**22**	0	**88**	**93**	**5**	**99**	**84**	1	**90**	**92**	0	1	0	0	**85**	0
Enterobacter gergoviae	0	**100**	1	1	**100**	**100**	**100**	0	0	0	**100**	**100**	**100**	**99**	0	**99**	0	**50**	**100**	0	0	1	**100**	**2**	**100**	**100**	**100**	**99**	**100**	**50**	**100**	**100**	**100**	0	0	**100**	**20**	1	0	**88**	0	0	0	0	1	**99**	0	**50**	**100**	**100**	**99**	0	**33**	**100**	**70**	0	**99**	0	0	**91**	0
Enterobacter intermedius	0	**100**	0	0	**100**	**100**	**100**	0	0	0	**100**	**100**	**100**	**100**	0	**99**	**95**	0	**99**	**99**	0	**100**	**100**	**67**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**99**	**100**	0	0	**100**	1	0	0	**100**	**50**	0	**67**	0	5	0	0	**82**	**89**	**99**	**99**	0	0	**99**	11	0	0	0	**33**	0
Enterobacter sakazakii	0	**86**	0	5	**97**	**95**	**98**	0	0	0	**100**	**100**	**100**	**100**	0	**100**	**29**	**43**	**100**	0	0	**71**	**100**	1	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	0	0	**100**	**9**	0	0	**99**	1	0	0	1	0	0	0	**99**	**86**	0	**100**	**98**	0	**90**	**86**	0	0	0	**71**	**95**	1
Erwinia spp	0	1	0	**29**	**99**	**99**	**99**	0	0	1	**100**	**100**	**100**	**100**	0	**87**	0	**10**	**99**	1	0	1	**100**	**15**	**100**	**100**	**100**	**92**	**2**	**68**	**90**	**100**	**40**	1	1	**86**	0	0	0	**58**	1	0	1	0	0	1	0	21	0	0	**100**	1	0	0	**93**	0	0	0	**46**	**78**	22
Escherichia coli 1	0	**91**	1	**42**	**99**	**99**	**98**	1	0	0	**99**	**100**	**99**	**99**	**68**	**88**	**61**	**8**	**99**	**93**	1	0	**99**	0	10	**17**	**10**	**4**	**98**	**78**	**70**	**42**	**99**	1	1	**34**	**17**	1	1	**10**	0	**2**	**36**	1	**95**	1	1	**99**	**2**	**50**	**83**	**4**	**68**	**58**	0	1	**9**	0	**93**	0	0
Escherichia coli 2	0	**92**	1	**28**	**95**	**92**	**85**	**4**	**12**	0	**100**	**100**	**99**	**99**	**4**	**89**	**36**	0	**92**	**93**	1	0	**97**	0	**4**	**4**	**1**	**1**	**94**	**18**	**44**	**8**	**97**	1	0	**8**	**16**	**4**	0	1	0	0	**3**	1	**91**	**16**	0	**98**	**2**	**24**	**21**	1	**48**	**4**	0	1	1	0	**72**	0	0
Escherichia coli 3	0	**99**	1	**60**	**99**	**99**	**98**	0	**21**	0	**100**	**100**	**99**	**99**	**19**	**91**	**55**	**11**	**96**	**99**	1	0	**99**	**2**	**87**	**89**	**96**	**2**	**99**	**94**	**96**	**38**	**99**	1	0	**40**	**21**	**2**	**2**	**19**	0	**11**	**6**	**2**	**87**	**23**	**2**	**99**	**2**	**36**	**91**	**2**	**83**	**46**	**2**	**4**	**15**	0	**90**	0	0
Escherichia fergusonii	0	**99**	0	1	**100**	**100**	**100**	0	**99**	0	**100**	**100**	**100**	**100**	**50**	**99**	**26**	0	**99**	0	0	0	**100**	0	**99**	**50**	**97**	**99**	**99**	**21**	1	0	**99**	**21**	0	0	1	0	0	**35**	0	1	0	0	0	**100**	0	**100**	**100**	**10**	**99**	1	**99**	**100**	1	0	0	0	**99**	0	0
Escherichia hermannii	0	**80**	0	**99**	**100**	**100**	**100**	0	0	0	**99**	**100**	**100**	**100**	0	**100**	**25**	0	**100**	0	0	0	**100**	0	**99**	**40**	**99**	**100**	**100**	**40**	0	**40**	**100**	0	0	**20**	**20**	0	0	**99**	0	**99**	0	0	**10**	1	0	**100**	**100**	0	**100**	0	1	**100**	1	0	0	0	**99**	0	0
Escherichia vulneris	0	**90**	0	0	**100**	**100**	**100**	0	0	0	**100**	**100**	**100**	**100**	0	**93**	0	0	**100**	1	0	**6**	**100**	1	**99**	**50**	**50**	**100**	**100**	**50**	**100**	**20**	**99**	1	0	**90**	**20**	0	0	**100**	0	**40**	0	0	0	0	0	**100**	**98**	0	**100**	**50**	**86**	0	0	0	0	0	0	0	0
Ewingella americana	0	**83**	0	0	0	**100**	**9**	0	0	0	**100**	**100**	**100**	**100**	0	**2**	0	0	**100**	0	0	0	**100**	0	**99**	**83**	**83**	**10**	**16**	**83**	0	0	**99**	0	0	0	0	0	0	**100**	0	0	0	0	0	**99**	0	**50**	**99**	**100**	**90**	0	0	0	**95**	0	0	0	**99**	0	0
Hafnia alvei	0	**98**	0	**38**	**85**	**100**	**99**	0	0	0	**100**	**100**	**100**	**100**	1	**93**	1	0	**100**	1	0	1	**100**	1	**20**	**20**	**20**	**15**	**98**	**5**	0	1	**99**	1	0	1	1	0	1	**85**	0	0	1	1	**73**	1	1	**98**	**98**	**10**	**65**	0	**99**	**93**	**62**	0	**25**	0	0	**54**	0
Klebsiella oxytoca	0	**99**	1	**100**	**100**	**100**	**100**	0	**100**	1	**100**	**100**	**100**	**100**	**92**	**99**	**69**	**98**	**100**	**99**	0	**99**	**100**	**26**	**99**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	1	**62**	**100**	**85**	**23**	1	**99**	**15**	1	**74**	0	**99**	**100**	**73**	**99**	**97**	**99**	**98**	0	**99**	0	**89**	0	**75**	0	**99**	**50**	0
Klebsiella pneumoniae ssp *ozaenae*	0	**64**	0	1	**97**	**99**	**97**	0	**97**	0	**97**	**100**	**100**	**100**	**55**	**58**	1	**55**	**99**	**81**	1	**45**	**99**	**15**	**98**	**97**	**97**	**91**	**97**	**75**	**97**	**30**	**99**	0	0	**79**	**58**	**15**	0	**94**	1	0	1	1	**70**	**98**	1	**97**	**70**	1	**94**	**15**	**20**	1	**21**	0	1	0	0	1	0
Klebsiella pneumoniae ssp *pneumoniae*	0	**97**	1	**16**	**99**	**99**	**99**	0	**88**	0	**100**	**100**	**100**	**99**	**40**	**98**	**33**	**95**	**99**	**98**	0	**98**	**99**	**35**	**96**	**99**	**99**	**99**	**99**	**99**	**99**	**99**	**99**	0	0	**99**	**65**	**3**	1	**99**	**25**	1	**25**	0	**81**	**95**	1	**50**	**59**	1	**99**	0	**82**	0	**94**	0	**82**	0	0	**92**	0
Klebsiella pneumoniae ssp *rhinoscleromatis*	0	10	0	1	**99**	**100**	**100**	0	**99**	0	**100**	**100**	**100**	**100**	0	**75**	0	**83**	**100**	**99**	0	0	**100**	0	**99**	**90**	**99**	**99**	**99**	0	**99**	**99**	**99**	0	0	**99**	**25**	1	0	**25**	0	0	0	0	**60**	**99**	0	**99**	**25**	1	1	0	0	0	0	0	0	0	0	0
Kluyvera ascorbata	0	**90**	0	1	**100**	**100**	**99**	0	0	0	**100**	**100**	**100**	**100**	0	**100**	1	0	**100**	**5**	**5**	**99**	**100**	**15**	**100**	**99**	**100**	**100**	**100**	**99**	**100**	**100**	**100**	0	1	**99**	0	1	0	**100**	**50**	0	0	0	4	0	0	**100**	**100**	**97**	**99**	0	**97**	**100**	**95**	0	0	0	**99**	0	0
Kluyvera cryocrescens	0	**50**	0	**50**	**100**	**100**	**99**	0	0	0	**100**	**100**	**100**	**100**	0	**100**	0	0	**99**	**50**	0	**95**	**100**	**25**	**100**	**100**	**100**	**100**	**100**	**99**	**100**	**99**	**100**	0	1	**100**	0	1	0	**100**	5	0	1	0	**64**	0	0	**100**	**100**	**100**	**100**	0	1	**99**	**25**	0	0	0	**90**	0	0
Leclercia adecarboxylata	0	**99**	0	0	**100**	**100**	**100**	0	**80**	0	**100**	**100**	**100**	**100**	0	**100**	**75**	0	**100**	1	0	0	**100**	**15**	**100**	**100**	**100**	**100**	**100**	**99**	**100**	**85**	**100**	0	0	**95**	**15**	**15**	0	**100**	0	**50**	0	0	0	**80**	0	**100**	**100**	0	**99**	0	0	0	0	0	1	0	**99**	0	0
Moellerella wisconsensis	0	**99**	0	0	0	**100**	0	0	**100**	0	**100**	**100**	**100**	**100**	0	0	0	0	**33**	0	0	0	**100**	0	0	0	0	0	1	**100**	**99**	**100**	0	0	2	**99**	0	0	0	**100**	0	0	0	0	0	**99**	0	**100**	0	0	**99**	0	0	0	20	0	0	0	**30**	1	0
Morganella morganii ssp *morganii*	0	**50**	0	0	1	**100**	0	0	0	0	**99**	**100**	**100**	**100**	0	0	0	0	1	0	0	0	**100**	1	1	0	0	0	0	1	0	1	1	0	0	0	0	0	**97**	1	0	**43**	0	0	0	0	1	**99**	0	0	21	0	1	**86**	9	1	**97**	**99**	**99**	0	0
Morganella morganii ssp *sibonii*	0	**50**	0	0	1	**100**	0	0	0	0	**99**	**100**	**100**	**100**	0	0	0	0	1	0	0	0	**100**	1	1	0	0	0	0	1	0	1	**99**	0	0	0	0	0	**99**	0	0	**99**	0	0	0	0	1	**99**	0	0	1	0	**78**	**50**	0	0	**67**	**99**	**100**	0	0
Pantoea spp 1	0	1	0	1	**100**	**100**	**99**	0	2	0	**100**	**100**	**100**	**100**	1	**80**	1	8	**100**	1	1	1	**100**	1	**71**	**66**	**68**	**60**	**80**	**35**	**11**	**98**	**99**	1	1	1	1	1	1	20	1	1	1	1	**51**	0	**28**	**29**	**5**	**99**	1	0	1	**51**	1	1	0	1	**77**	1
Pantoea spp 2	0	**75**	0	10	**100**	**99**	**97**	0	1	0	**100**	**100**	**100**	**100**	**13**	**95**	**26**	**18**	**100**	**71**	1	**26**	**100**	**25**	**100**	**90**	**96**	**99**	**99**	**95**	**77**	**79**	**99**	1	**10**	**73**	**7**	1	1	**98**	**14**	**24**	1	1	**18**	**26**	0	**79**	**71**	**57**	**99**	**10**	0	**14**	**83**	1	1	0	**40**	**53**	1
Pantoea agglomerans	0	**41**	0	0	**100**	**100**	**100**	0	0	0	**100**	**100**	**100**	**100**	0	**100**	0	**99**	**97**	**2**	0	0	**100**	0	**100**	**100**	**100**	**21**	**66**	0	**2**	**100**	**100**	0	0	0	1	0	0	0	0	0	0	**41**	0	**90**	0	**97**	**100**	0	**97**	0	0	0	1	0	0	0	**97**	**41**
Pantoea dispersa	0	**97**	1	1	**100**	**100**	**100**	0	1	0	**100**	**100**	**100**	**100**	0	**89**	0	**100**	**100**	0	0	0	**100**	1	**24**	1	1	**97**	**97**	**45**	**63**	**85**	**97**	0	0	0	0	0	1	**95**	0	**36**	0	**54**	0	**95**	0	**100**	**100**	**100**	**100**	0	0	0	**75**	0	0	0	0	**85**	0
Photobacterium damselae	0	0	0	0	0	1	4	0	0	0	**100**	**100**	**99**	**100**	0	0	0	0	0	0	0	0	**99**	0	0	1	0	0	**82**	17	0	0	**50**	0	0	0	1	1	0	0	0	0	4	0	0	0	0	0	0	0	4	4	**99**	**62**	1	1	0	**99**	0	0	**82**	0

API 50 CHE V3.1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	API 20 E												
	0	GLY	ERY	DARA	LARA	RIB	DXYL	LXYL	ADO	MDX	GAL	GLU	FRU	MNE	SBE	RHA	DUL	INO	MAN	SOR	MDM	MDG	NAG	AMY	ARB	ESC	SAL	CEL	MAL	LAC	MEL	SAC	TRE	INU	MLZ	RAF	AMD	GLYG	XLT	GEN	TUR	LYX	TAG	DFUC	LFUC	DARL	LARL	GNT	2KG	5KG	ONPG	ADH	LDC	ODC	CIT	H2S	URE	TDA	IND	VP	GEL
Plesiomonas shigelloides	0	88	0	0	0	100	0	0	0	0	100	100	11	22	0	0	0	100	0	0	0	0	100	0	1	1	1	0	100	99	66	22	88	0	0	0	0	0	0	0	11	0	0	0	88	0	0	100	33	0	99	99	100	100	0	0	0	0	100	0	0
Proteus mirabilis	0	100	0	100	0	100	100	0	0	0	100	100	20	0	0	1	0	0	0	0	0	0	100	0	0	0	0	1	0	1	0	1	98	0	0	1	0	0	0	0	0	0	0	0	0	0	0	100	60	0	1	0	0	99	80	75	99	98	1	1	80
Proteus penneri	0	99	0	100	1	100	100	0	0	0	100	100	75	1	1	1	0	0	0	0	0	99	100	0	0	0	0	0	100	1	0	100	80	0	25	1	0	0	0	1	97	0	0	0	0	0	0	99	99	0	1	0	0	0	1	99	100	99	0	0	88
Proteus vulgaris group *	0	71	1	90	0	100	99	0	0	0	100	100	15	0	0	1	0	0	0	0	0	71	100	0	98	70	70	0	99	1	0	100	57	0	29	1	0	0	0	0	71	0	0	0	0	0	0	100	99	0	1	0	0	0	14	86	99	99	95	0	67
Providencia alcalifaciens	0	67	0	0	0	100	1	0	98	0	0	100	100	100	0	0	0	1	1	1	0	0	100	0	0	0	1	1	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	98	0	0	99	99	0	0
Providencia rettgeri	0	80	70	0	10	100	1	0	100	0	80	100	100	100	0	70	0	99	99	1	0	1	100	0	92	90	75	1	1	1	1	15	0	0	0	1	0	0	0	0	0	0	0	0	99	99	100	80	0	1	1	1	0	0	75	0	99	99	99	0	0
Providencia rustigianii	0	50	0	0	0	100	0	0	0	0	100	100	100	100	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	15	0	0	99	99	0	0
Providencia stuartii	0	75	0	0	0	100	1	0	1	0	99	100	100	99	0	0	0	80	1	1	0	0	99	0	0	1	0	0	0	0	0	20	99	0	0	1	0	1	99	0	0	87	0	0	0	1	0	100	0	0	1	0	0	0	92	0	30	92	97	0	0
Rahnella aquatilis	0	93	0	1	100	100	99	0	0	0	100	100	100	100	1	99	94	0	100	99	0	1	100	1	99	100	99	100	99	99	100	100	100	1	22	100	29	1	0	99	12	1	1	0	15	0	0	46	50	99	100	0	0	0	69	0	0	2	0	99	0
Raoultella ornithinolytica	0	100	0	0	100	100	100	0	100	0	100	100	100	100	100	100	1	98	100	100	0	100	100	1	100	100	100	100	100	100	100	100	100	0	0	100	1	0	0	100	1	0	1	0	100	100	0	100	89	100	100	0	99	99	99	0	89	0	100	75	0
Raoultella planticola	0	100	0	7	100	100	100	0	100	0	100	100	100	100	100	99	3	100	100	100	0	99	100	9	100	100	100	100	100	100	100	100	100	1	0	100	60	5	0	100	0	0	0	0	100	100	0	100	97	99	100	0	100	0	100	0	75	0	20	100	0
Raoultella terrigena	0	100	0	0	100	100	100	0	100	0	100	100	100	100	99	100	1	91	100	100	0	100	100	1	100	100	100	100	100	100	100	100	100	1	91	100	74	5	0	100	0	0	0	0	100	99	1	80	50	90	100	0	99	20	90	0	0	0	0	91	0
Salmonella choleraesuis ssp *arizonae*	0	98	0	40	96	100	100	0	0	0	100	100	100	100	1	100	12	0	100	100	0	1	100	0	1	1	1	1	100	94	100	3	100	0	0	2	0	0	0	28	0	0	0	0	95	1	0	100	0	50	97	99	99	99	99	60	0	0	1	0	0
Salmonella choleraesuis ssp *choleraesuis*	0	99	0	0	1	100	100	0	0	0	100	100	100	100	0	100	10	0	100	100	0	0	100	0	0	0	0	0	100	0	100	0	10	0	0	0	0	0	0	0	0	1	0	100	0	0	100	0	100	0	35	99	99	5	65	0	0	0	0	0
Salmonella ser. *Gallinarum* **	0	99	0	0	99	100	99	0	0	0	100	100	100	100	0	75	100	0	100	0	0	0	100	0	0	0	0	0	100	0	0	0	99	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0	100	0	1	100	1	1	1	0	0	0	0	0
Salmonella ser. *Paratyphi* A **	0	99	0	0	100	100	0	0	0	0	100	100	100	100	0	100	99	1	100	99	0	0	100	0	1	0	0	1	99	0	100	0	99	0	0	0	1	0	0	0	0	0	100	0	99	0	0	100	0	100	0	1	0	99	0	1	0	0	0	0	0
Salmonella ser. *Pullorum* **	0	91	0	0	100	100	95	0	0	0	100	100	100	100	0	100	0	0	100	72	0	0	100	0	0	0	0	0	4	0	0	0	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	1	99	100	0	82	0	0	0	0	0
Salmonella spp	0	86	0	33	86	100	96	0	0	1	100	100	99	99	1	100	93	34	95	95	0	0	95	0	7	3	3	2	97	2	90	2	99	0	0	2	8	1	0	1	0	0	48	1	97	1	0	100	3	93	4	61	93	90	82	90	0	0	0	1	1
Salmonella typhi	0	99	1	0	1	100	92	0	0	0	100	100	100	100	0	0	1	0	100	99	0	0	100	0	1	1	0	1	99	1	99	0	99	0	0	0	1	0	0	0	0	0	0	0	1	0	0	100	0	0	0	1	99	0	0	8	0	0	0	0	0
Salmonella typhimurium	0	99	0	0	100	100	100	0	0	0	100	100	100	100	0	75	100	50	100	100	0	0	100	0	0	0	0	0	100	0	100	0	100	0	0	0	0	0	0	0	0	0	100	0	100	0	0	100	0	100	0	72	100	100	99	100	0	0	0	0	0
Serratia ficaria	0	74	71	0	100	100	100	0	74	0	95	100	100	100	0	74	0	74	100	100	0	25	100	0	100	100	100	99	100	14	74	100	100	0	74	74	0	0	0	74	96	1	0	0	1	100	74	100	100	100	99	0	0	0	100	0	0	0	0	50	85
Serratia fonticola	0	100	91	10	100	100	75	1	100	0	100	100	100	100	0	90	99	90	100	100	0	90	100	0	100	100	100	25	99	95	90	50	100	1	0	99	50	0	55	100	1	55	99	0	0	98	99	100	99	45	99	0	50	99	82	0	0	0	0	0	0
Serratia liquefaciens	0	98	1	1	99	100	99	0	1	0	100	100	100	100	0	1	1	85	99	99	0	25	100	1	99	99	99	40	92	25	75	99	100	0	75	87	22	0	1	50	75	3	0	0	1	0	1	99	98	99	94	1	75	99	84	0	1	0	0	49	49
Serratia marcescens	0	99	17	1	0	100	21	0	92	0	99	100	100	100	0	0	0	99	100	99	0	0	99	0	96	96	99	17	96	4	13	100	100	0	0	1	4	4	79	4	0	79	0	1	1	1	67	100	99	99	75	0	96	75	99	0	13	0	1	71	83
Serratia odorifera 1	0	100	1	1	100	100	100	0	99	0	100	100	100	100	0	99	0	100	100	100	0	0	100	1	99	99	99	100	100	99	100	100	100	0	1	100	60	0	0	80	0	0	0	20	0	0	99	100	100	0	99	0	99	80	99	0	0	0	99	10	99
Serratia odorifera 2	0	100	99	20	100	100	100	0	99	0	100	100	100	100	0	99	0	100	100	100	0	0	100	1	60	60	99	100	100	80	100	0	100	0	1	10	60	0	0	20	0	0	0	20	0	0	100	100	100	0	99	0	80	1	99	0	0	0	99	80	80
Serratia plymuthica	0	94	0	0	100	100	99	0	0	0	100	100	100	100	0	1	0	99	100	65	0	96	100	35	100	96	99	99	92	99	99	100	100	1	99	99	1	0	0	99	99	0	0	0	1	0	0	99	99	77	99	0	0	0	65	0	0	0	0	68	54
Serratia proteamaculans	0	80	2	0	80	100	100	0	0	0	100	100	100	100	0	4	1	97	100	69	0	30	100	2	95	99	91	30	69	25	25	97	100	0	8	25	1	0	0	10	4	0	0	0	0	0	0	100	100	85	99	1	95	100	80	0	1	0	0	61	38
Serratia rubidaea	0	100	83	1	100	100	99	0	100	0	96	100	100	100	0	1	0	99	100	1	0	75	100	1	100	96	99	99	99	100	99	99	100	1	32	96	1	0	0	100	99	0	0	43	0	99	0	99	100	12	99	0	50	0	97	0	1	0	0	96	79
Shigella boydii	0	94	0	1	100	99	0	0	0	0	100	100	100	100	25	0	0	0	75	75	0	0	100	0	0	0	0	0	75	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	1	0	0	100	0	0	0	0	0	0	0	0	25	0	0
Shigella dysenteriae	0	99	0	0	15	75	0	0	0	0	100	100	100	100	30	25	0	0	0	10	0	0	100	0	0	0	0	0	30	0	0	0	99	0	0	0	10	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	15	0	0
Shigella flexneri	0	44	0	0	99	44	1	0	0	0	100	100	100	100	0	1	44	0	67	1	0	0	100	0	0	0	0	0	94	0	25	33	99	0	0	56	1	0	0	0	0	0	0	0	0	0	0	78	1	0	0	0	0	0	0	0	25	0	0
Shigella sonnei	0	71	0	1	100	98	1	0	0	0	100	100	100	100	0	71	0	0	100	1	0	0	99	0	0	1	0	0	86	14	1	1	99	0	0	1	1	0	0	1	1	0	1	1	57	0	0	93	0	36	99	0	0	85	0	0	0	0	0	0	0
Vibrio alginolyticus	0	95	0	0	4	99	0	0	0	0	73	100	100	97	0	0	0	0	99	67	0	4	99	0	2	84	34	84	98	1	0	100	99	0	0	1	98	99	1	1	0	0	0	0	0	0	0	100	0	0	0	0	99	80	63	0	1	0	100	13	90
Vibrio cholerae	0	98	0	0	0	100	0	0	0	0	100	100	100	43	0	0	0	0	100	0	0	0	100	0	1	0	0	1	100	6	1	99	100	0	1	1	99	99	0	0	0	0	0	0	0	0	0	100	1	0	98	1	98	99	93	0	0	0	99	84	90
Vibrio fluvialis	0	75	0	0	100	100	0	0	0	0	100	100	100	100	0	0	0	1	100	3	0	3	100	5	65	82	5	65	100	3	0	100	100	0	0	0	100	95	0	0	0	0	0	0	0	0	65	0	100	0	0	99	82	0	0	50	0	0	0	95	0	50
Vibrio metschnikovii	0	60	0	0	0	60	0	0	0	0	30	100	100	99	0	0	0	50	99	10	0	1	99	0	0	50	1	1	100	25	0	100	100	0	0	0	99	99	0	0	0	0	0	0	0	0	0	100	0	0	95	60	75	0	1	0	0	0	1	99	90
Vibrio mimicus	0	99	0	0	0	100	0	0	0	0	100	100	100	100	0	0	0	0	100	0	0	0	100	0	5	0	0	1	100	1	0	1	100	0	1	0	95	1	0	1	0	0	37	0	1	0	0	100	0	0	99	0	99	99	50	0	0	0	99	0	99
Vibrio parahaemolyticus	0	20	0	0	60	60	0	0	0	0	100	100	100	100	0	0	0	0	60	20	0	0	99	0	0	0	1	20	99	0	10	0	99	0	0	0	80	70	0	0	0	0	0	0	0	0	0	100	0	10	0	0	100	99	21	0	5	0	100	1	99
Vibrio vulnificus	0	0	0	0	0	99	0	0	0	0	99	100	100	99	0	0	0	0	50	0	0	0	99	99	99	100	99	99	100	6	0	1	100	6	0	0	100	100	0	99	0	0	0	0	27	0	0	100	0	0	99	0	72	75	75	0	0	0	72	1	50
Yersinia aldovae	0	57	0	0	99	100	43	0	0	0	100	100	100	100	0	0	0	1	99	99	0	0	100	0	0	0	0	0	0	0	0	1	99	0	0	0	0	0	0	0	0	0	0	0	35	0	0	1	0	0	17	0	1	40	0	0	99	0	0	1	0
Yersinia enterocolitica	0	99	0	0	98	99	60	0	0	0	100	100	100	100	99	1	0	65	100	100	0	0	100	1	81	50	50	99	98	24	0	99	100	0	0	1	1	0	0	98	0	0	0	0	25	50	0	99	15	90	82	0	0	89	0	0	99	0	65	8	0
Yersinia frederiksenii	0	100	0	0	100	100	100	0	0	0	100	100	100	100	100	99	0	99	100	100	0	0	100	1	100	99	99	100	100	1	0	100	100	0	0	1	0	0	0	99	0	0	0	0	100	100	0	100	0	100	99	0	0	99	1	0	99	0	99	1	0
Yersinia intermedia	0	100	0	0	100	100	100	0	0	0	100	100	100	100	100	99	0	99	100	100	0	82	100	15	100	100	100	100	100	0	99	100	100	0	0	99	0	0	0	100	0	0	1	0	82	86	0	100	0	100	99	0	0	100	1	0	99	0	99	2	0
Yersinia kristensenii	0	99	0	0	100	100	60	0	0	0	100	100	100	100	92	0	0	68	100	100	0	0	100	0	27	1	1	100	90	1	0	0	100	3	0	0	1	0	0	90	0	0	0	0	8	8	0	90	0	54	85	0	0	85	0	0	99	0	30	0	0
Yersinia pestis	0	0	0	0	100	100	100	0	0	0	100	100	100	100	0	0	0	0	98	1	0	0	100	0	100	100	95	0	95	0	0	0	100	0	0	1	89	0	0	0	0	0	19	0	0	0	95	0	19	0	57	52	0	0	0	0	0	0	1	50
Yersinia pseudotuberculosis	0	99	0	0	99	100	100	0	1	0	100	100	100	100	1	99	0	0	100	0	0	0	100	0	100	99	90	0	100	0	90	0	100	0	0	1	1	0	0	0	0	30	0	0	0	1	1	80	1	90	99	0	0	0	1	0	99	0	0	0	0
Yersinia ruckeri	0	63	0	0	1	95	0	0	0	0	100	100	100	100	0	0	0	0	100	13	0	0	100	0	0	0	0	1	99	0	0	0	99	0	0	1	0	0	0	0	0	0	0	0	0	0	0	44	0	0	81	1	99	100	0	0	0	0	0	5	0

* groupe / group / Gruppe / grupo / gruppo / Grupo / ομάδα / grupp / gruppe / grupa

** ser. = sérovar / serovar / serovariedad / serotipo / ορότυπος / serotyp

BIBLIOGRAPHIE / LITERATURE REFERENCES / LITERATUR / BIBLIOGRAFIA / ΑΝΑΦΟΡΕΣ ΑΡΘΡΟΓΡΑΦΙΩΝ / REFERENSLITTERATUR / LITTERATUR / PIŚMIENNICTWO

Bacillus
et apparentés / and related genera / und verwandte Gattungen / y microorganismos próximos / e generi affini / e semelhantes / και σχετικά γένη / och närstående släkten / og relaterede genera / i rodzaje pokrewne

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Symbole / Symbol / Símbolo / Simbolo / Σύμβολο	Signification / Meaning / Bedeutung / Significado / Significato / Επεξήγηση / Betydelse / Betydning / Znaczenie
REF / REF	Référence du catalogue / Catalogue number (GB) / Catalog number (US) Bestellnummer / Número de catálogo / Numero di catalogo Referência de catálogo / Αριθμός καταλόγου Artikelnummer / Katalognummer / Numer katalogowy
IVD	Dispositif médical de diagnostic in vitro / In Vitro Diagnostic Medical Device In Vitro Diagnostikum / Producto sanitario para diagnóstico in vitro Dispositivo medico-diagnostico in vitro / Dispositivo médico para diagnóstico in vitro / In Vitro Διαγνωστικό Ιατροτεχνολογικό προϊόν / Medicinsk utrustning för in vitro-diagnostik / Medicinsk udstyr til in vitro-diagnostik Urządzenie medyczne do diagnostyki in vitro
	Fabricant / Manufacturer / Hersteller / Fabricante / Fabbricante Κατασκευαστής / Tillverkad av / Producent
	Limites de température / Temperature limitation Temperaturbegrenzung / Limite de temperatura Limiti di temperatura / Limites de temperatura Περιορισμοί θερμοκρασίας / Temperaturgräns Temperaturbegrænsning / Przechowywać w temperaturze
	Utiliser jusque / Use by / Verwendbar bis / Fecha de caducidad Utilizzare entro / Prazo de validade / Ημερομηνία λήξης / Används före Holdbar til / Zużyć do
LOT	Code du lot / Batch code / Chargenbezeichnung / Código de lote Codice del lotto / Código do lote / Αριθμός Παρτίδας / Batchnummer / Lotnummer / Numer serii
	Consulter les instructions d'utilisation / Consult Instructions for Use Gebrauchsanweisung beachten / Consulte las instrucciones de uso Consultare le istruzioni per l'uso / Consulte as instruções de utilização Συμβουλευτείτε τις οδηγίες χρήσης / Se användarinstruktionerna Se brugsanvisning / Odnieś się do instrukcji użycia
	Contenu suffisant pour "n" tests / Contains sufficient for <n> tests Inhalt ausreichend für <n> Prüfungen / Contenido suficiente para <n> ensayos Contenuto sufficiente per "n" saggi / Conteúdo suficiente para “n” ensaios Περιεχόμενο επαρκές για «ν» εξετάσεις / Innehållet räcker till <n> tester Indeholder tilstrækkeligt til "n" undersøgelser Zawartość wystarczy do wykonania <n> oznaczeń

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