



## API & ID 32 IDENTIFICATION DATABASES |

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BIOMÉRIEUX  
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## INTRODUCTION

The API®, ID 32 and rapid ID 32 database update takes into account:

- the evolution of international taxonomy
- the description of the new bacterial species,
- newly acquired bacteriology data (new profiles for bacterial strains which have an impact on performance data)

As a result of the update, the APIWEB™ software version has changed from version 1.2.1 to version 1.3.0

The API and ID 32 databases have again been updated

Twenty-two of the twenty-three identification databases have been revised, taking account the biochemical profiles of over 56,277 strains. Today, 697 species of bacteria and yeasts can be identified, including 14 new species and 50 that have been assigned new names.

# WHAT'S CHANGED IN THE DATABASES?

## The changes made can be broken down as follows:

**A number of new species** have been added to the database (including both entirely new species and others added on the basis of new results).

**Certain bacterial species** have been deleted due to more stringent criteria. Certain rare species which are not sufficiently studied have been removed from the database.

**The names of certain species** have been changed to follow modifications in the bacterial taxonomy as officially described in the International Journal of Systematic and Evolutionary Microbiology.

**Notes have been revised** to reflect the changes in names and the species added and deleted.

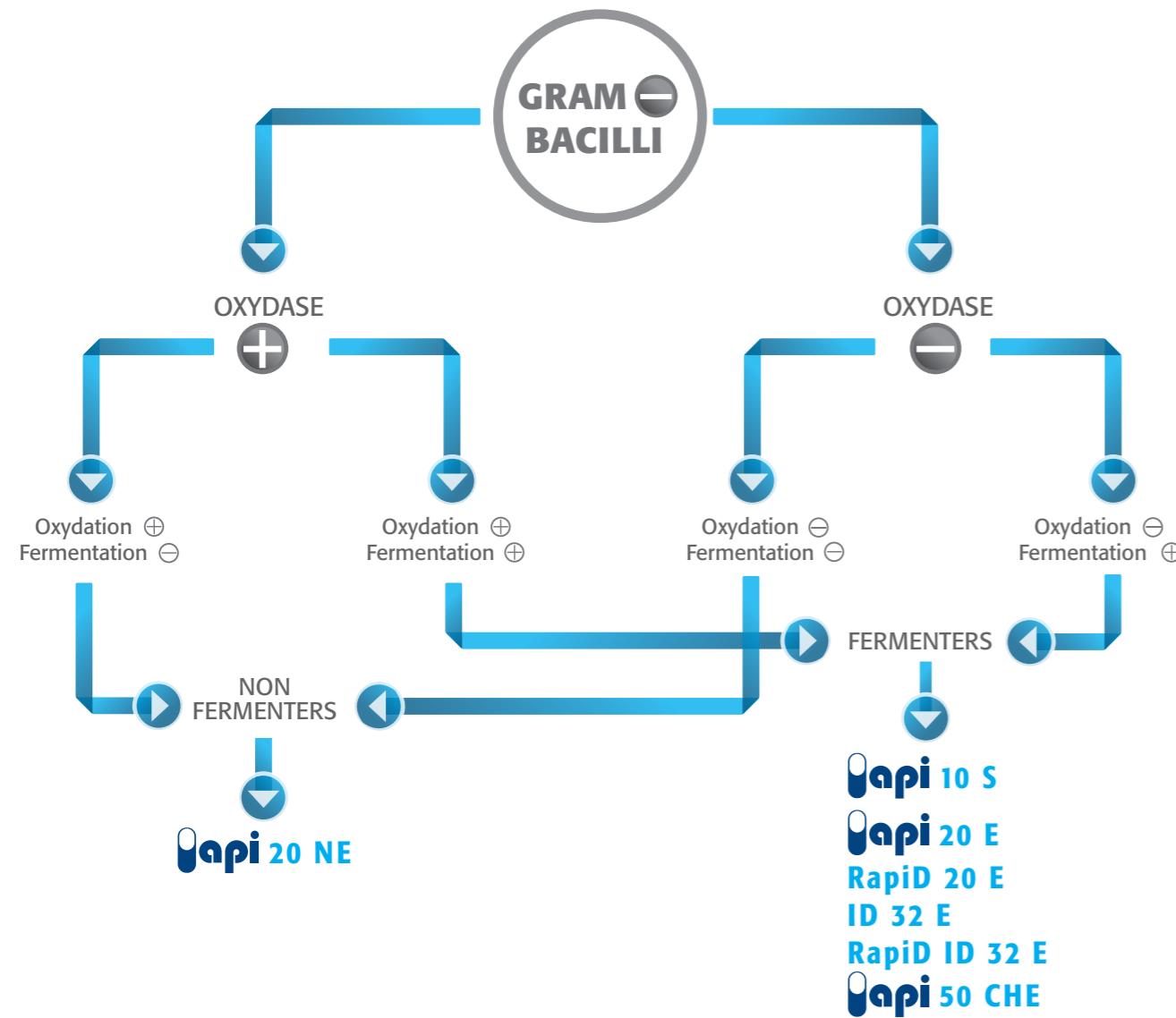
**Percentages and performances** have been altered to reflect variations observed in the profiles analyzed as the database was revised.

**Additional tests** were modified to reflect the new reference information available.

Database	Version number		Changes to thesaurus		Changes to database	
	old	new	Taxons	Notes	Identification	Additional tests
API® 20 E	v 4.1	v 5.0	X	X	X	X
RapiD 20 E™	v 3.1	v 3.2	X	-	-	-
API® 10 S	v 3.1	v 4.0	X	X	X	-
API® 20 NE	v 7.0	v 8.0	X	X	X	-
API® STAPH	v 4.1	v 5.0	-	-	X	-
API® 20 STREP	v 7.0	v 8.0	X	X	X	X
API® 20 C AUX	v 4.0	v 5.0	X	X	X	-
API® CANDIDA	v 2.1	v 2.2	X	X	-	-
API® 20 A	v 4.0	v 5.0	X	X	X	X
API® CORYNE	v 3.0	v 4.0	X	X	X	-
API® CAMPY	v 2.1	v 3.0	X	-	X	-
API® LISTERIA	v 1.2	v 2.0	-	X	X	-
API® NH	v 3.0	v 4.0	X	X	X	-
API® 50 CHB	v 4.0	v 4.1	X	-	-	-
API® 50 CHE	v 3.1	v 3.2	X	-	-	-
API® 50 CHL	v 5.1	v 5.2	X	-	-	-
ID 32 E	v 3.0	v 4.0	X	-	X	X
rapid ID 32 E	v 3.1	v 4.0	X	-	X	X
ID 32 STAPH	v 2.1	v 3.0	X	X	X	X
rapid ID 32 STREP	v 3.0	v 4.0	X	X	X	X
ID 32 C	v 3.0	v 4.0	X	X	X	X
rapid ID 32 A	v 3.2	v 3.3	X	-	-	-

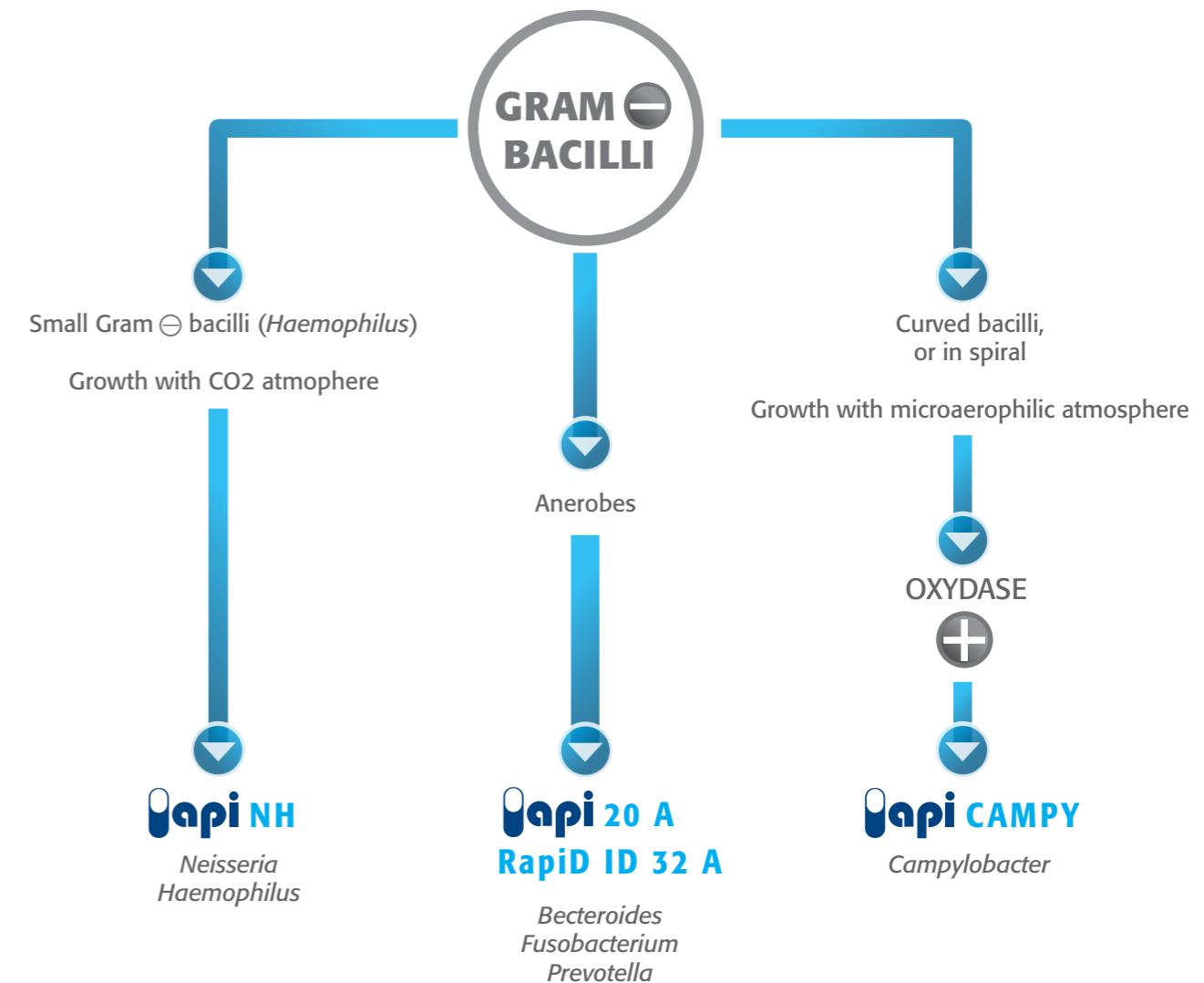
## ORIENTATION TESTS

### GRAM $\ominus$ BACILLI



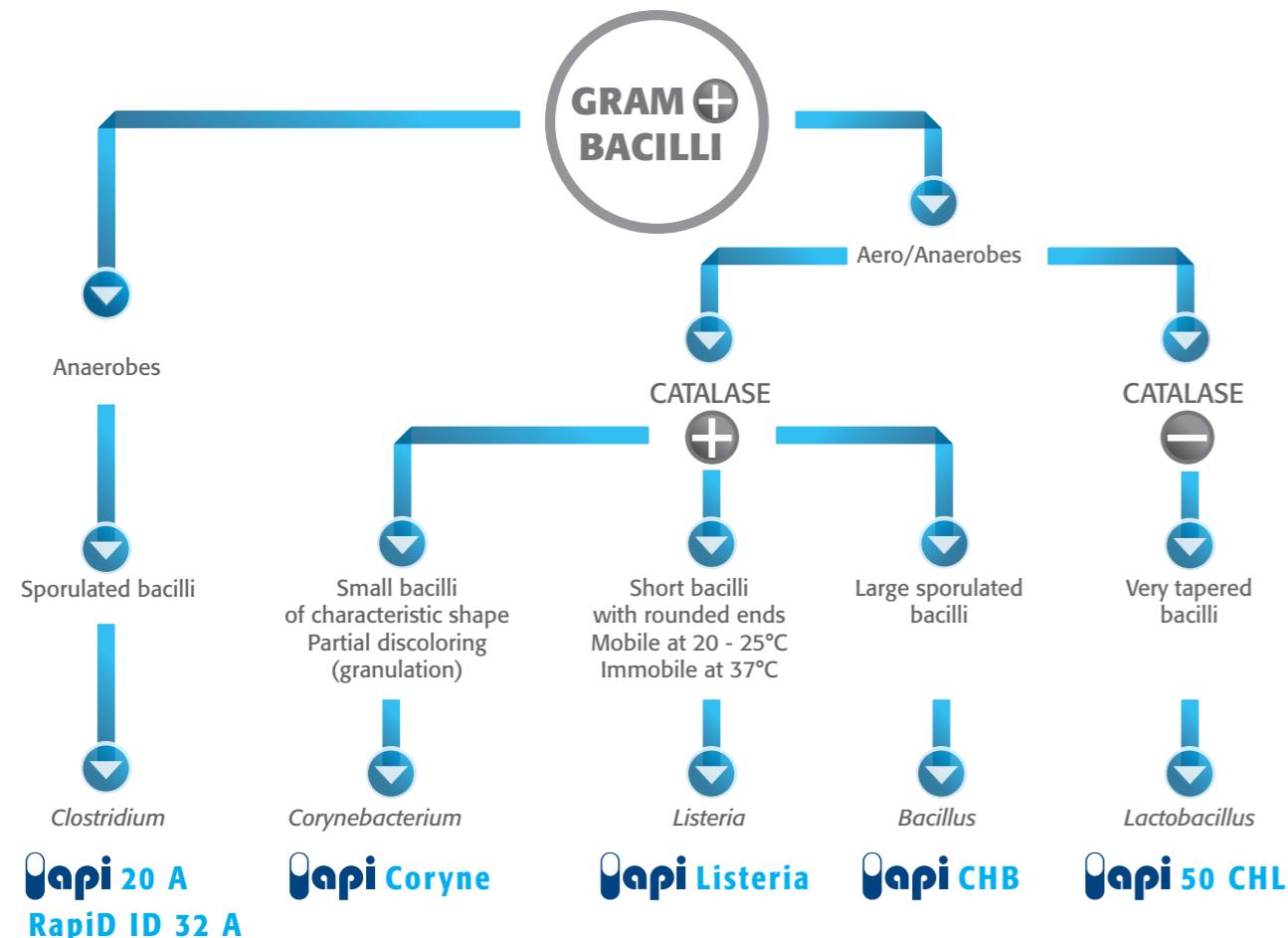
## ORIENTATION TESTS

### OTHER GRAM $\ominus$ BACILLI



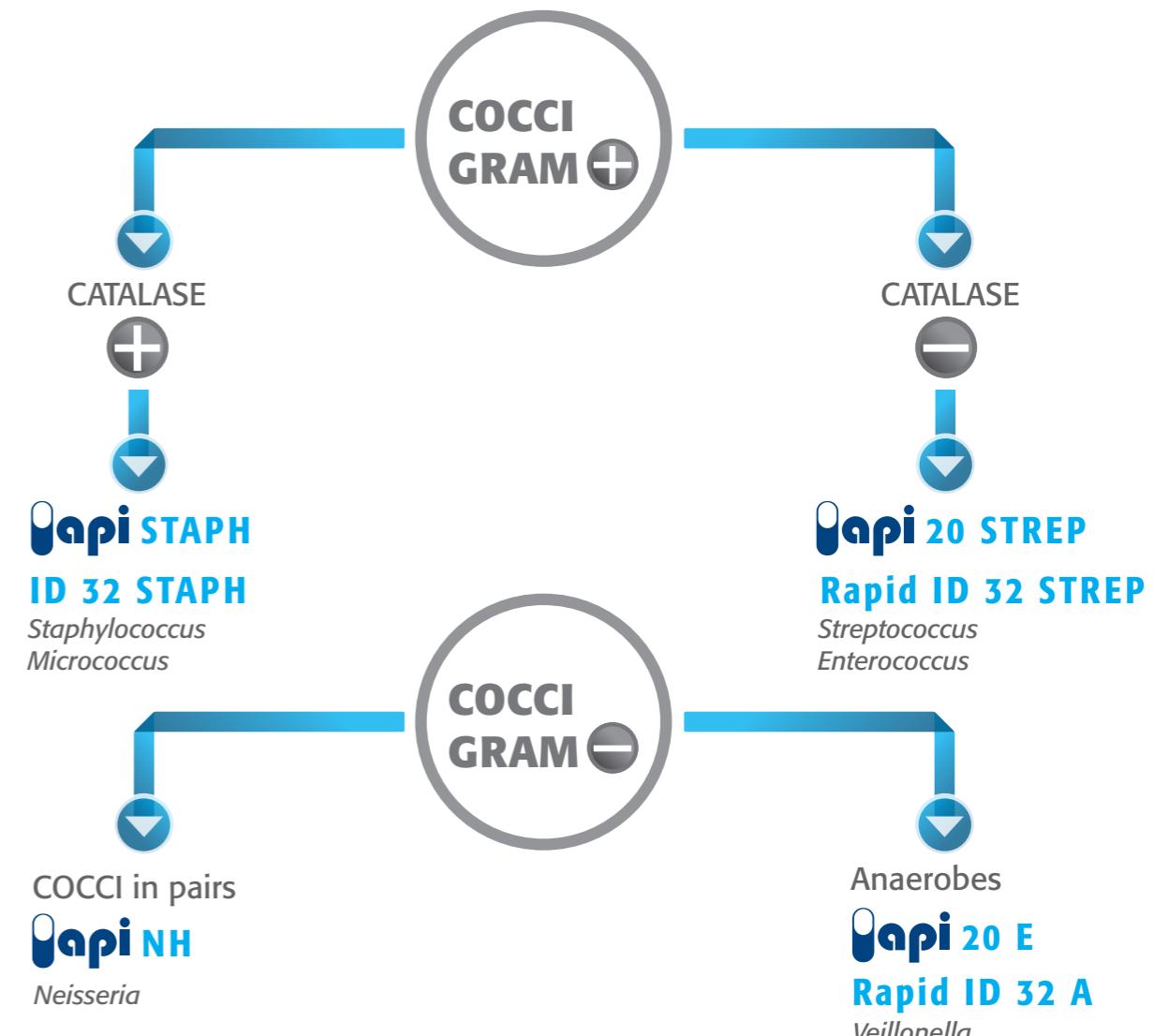
## ORIENTATION TESTS

GRAM<sup>+</sup> BACILLI



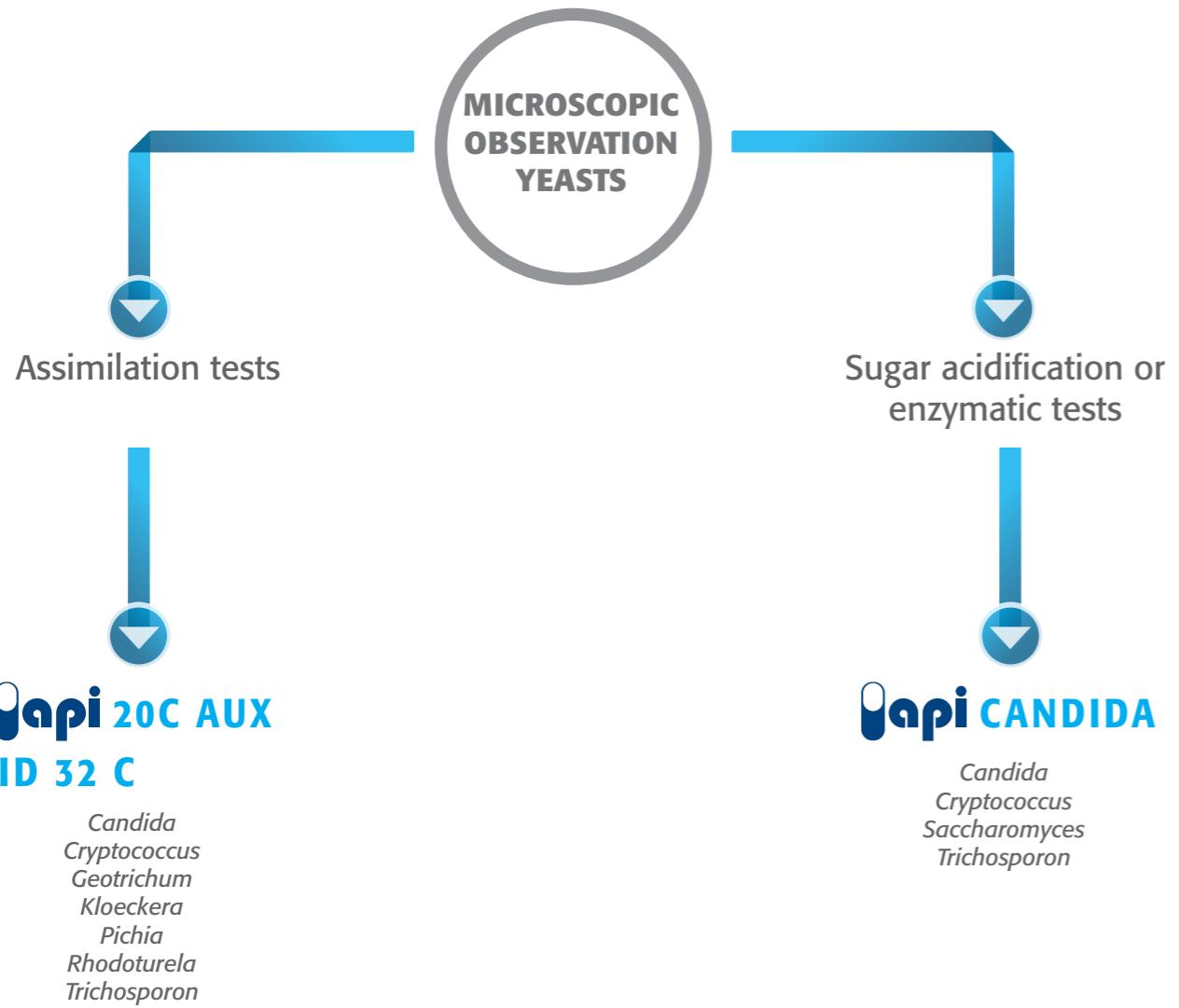
## ORIENTATION TESTS

COCCI



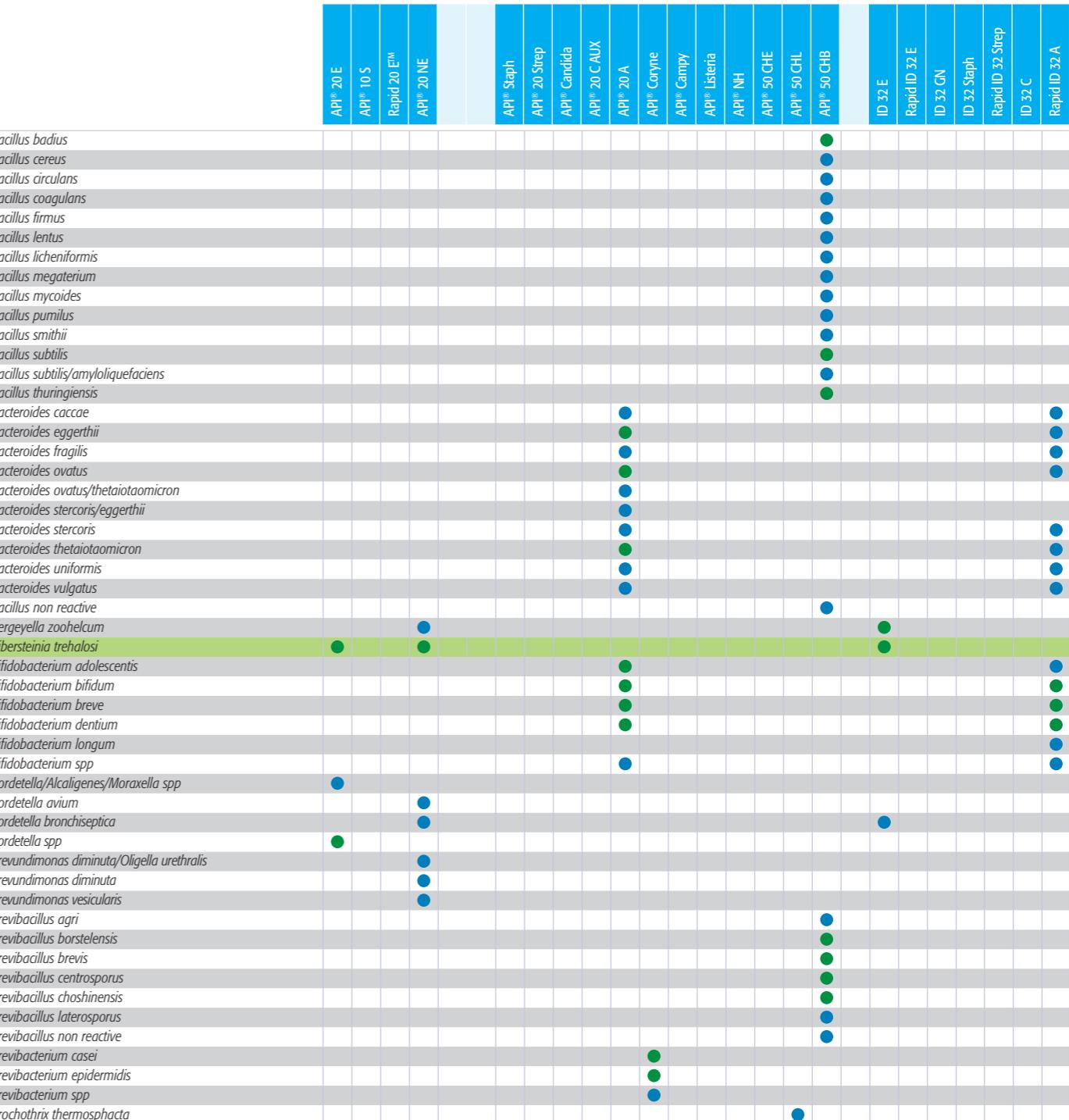
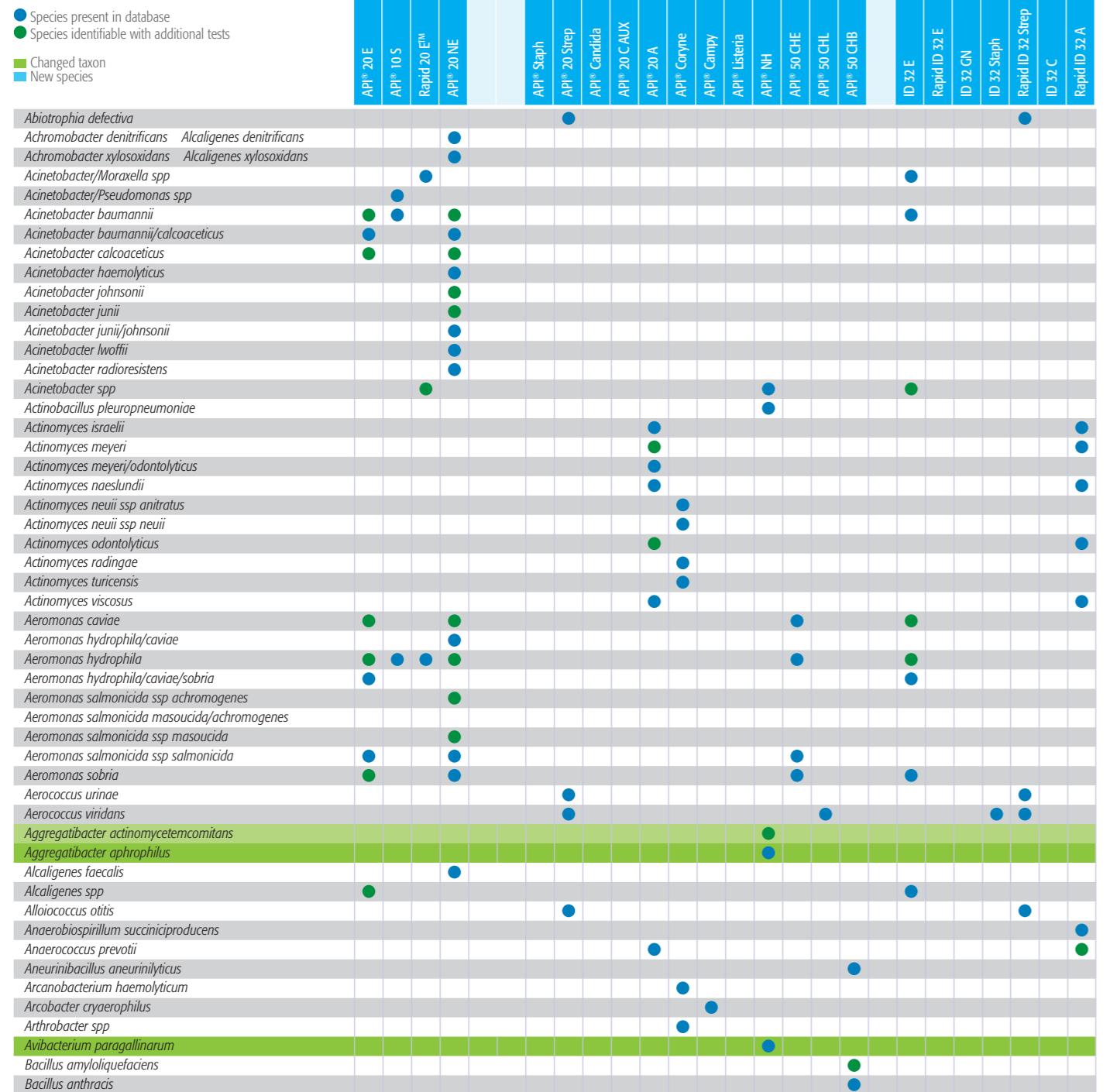
# ORIENTATION TESTS

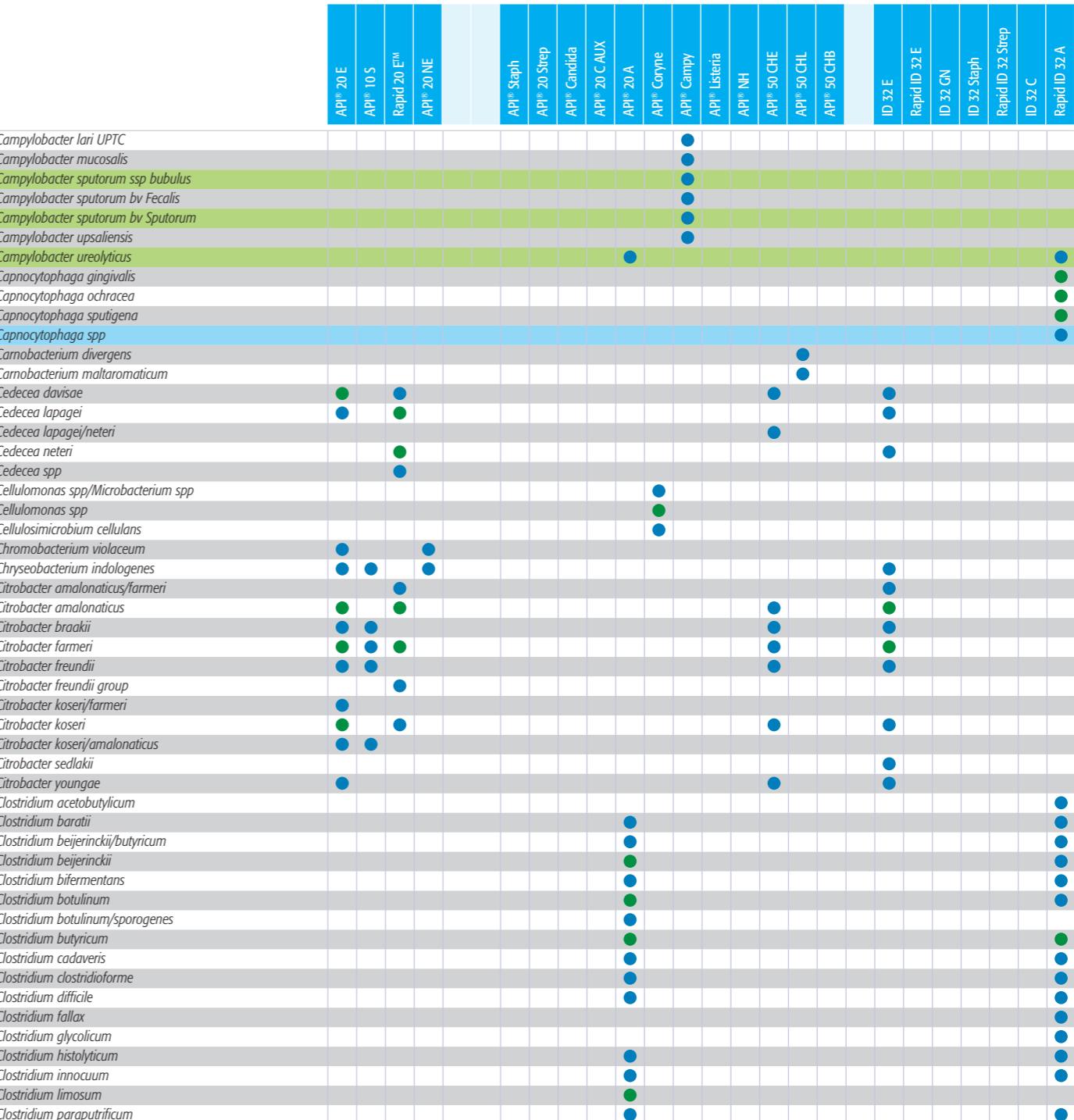
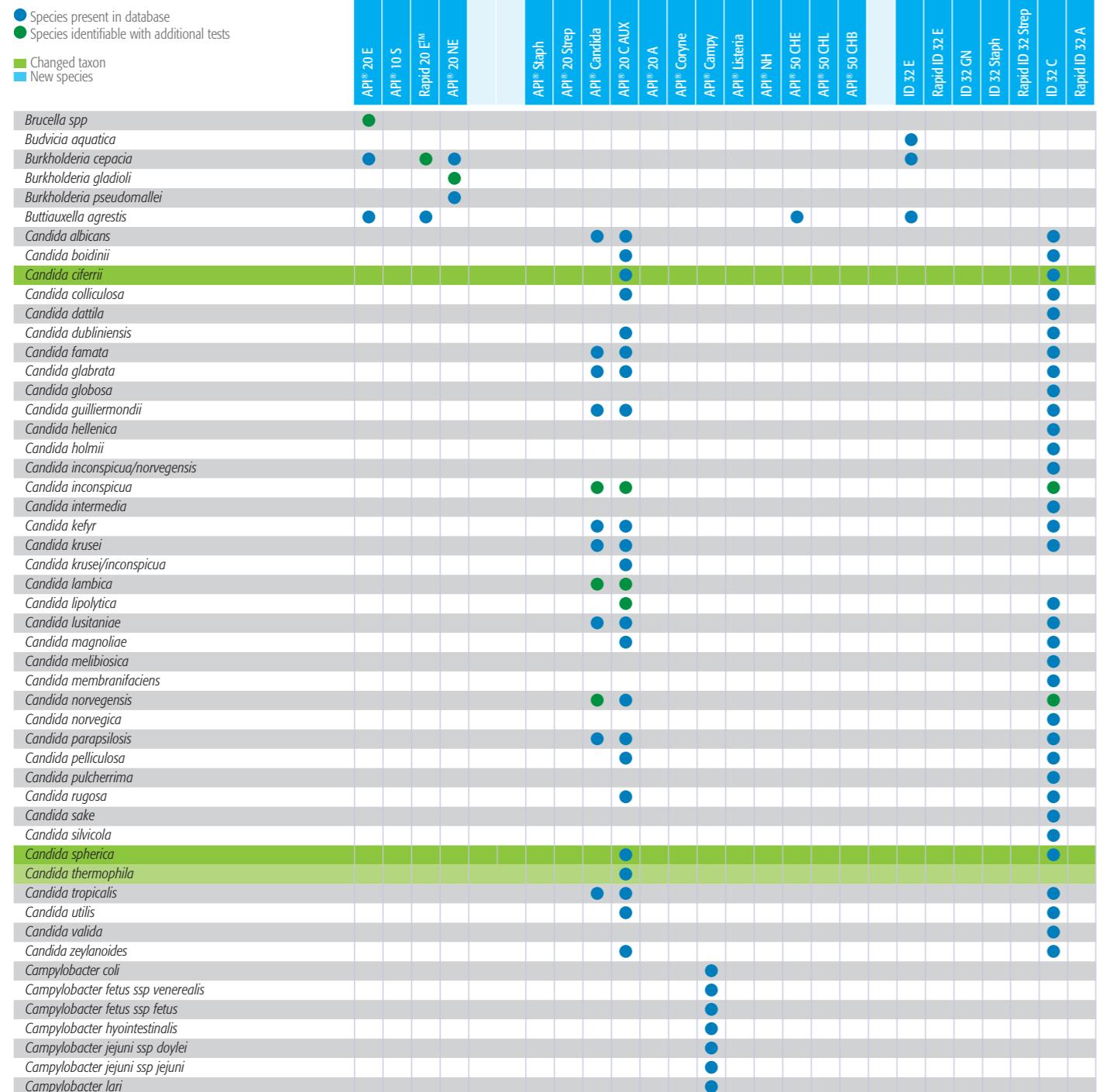
## YEASTS



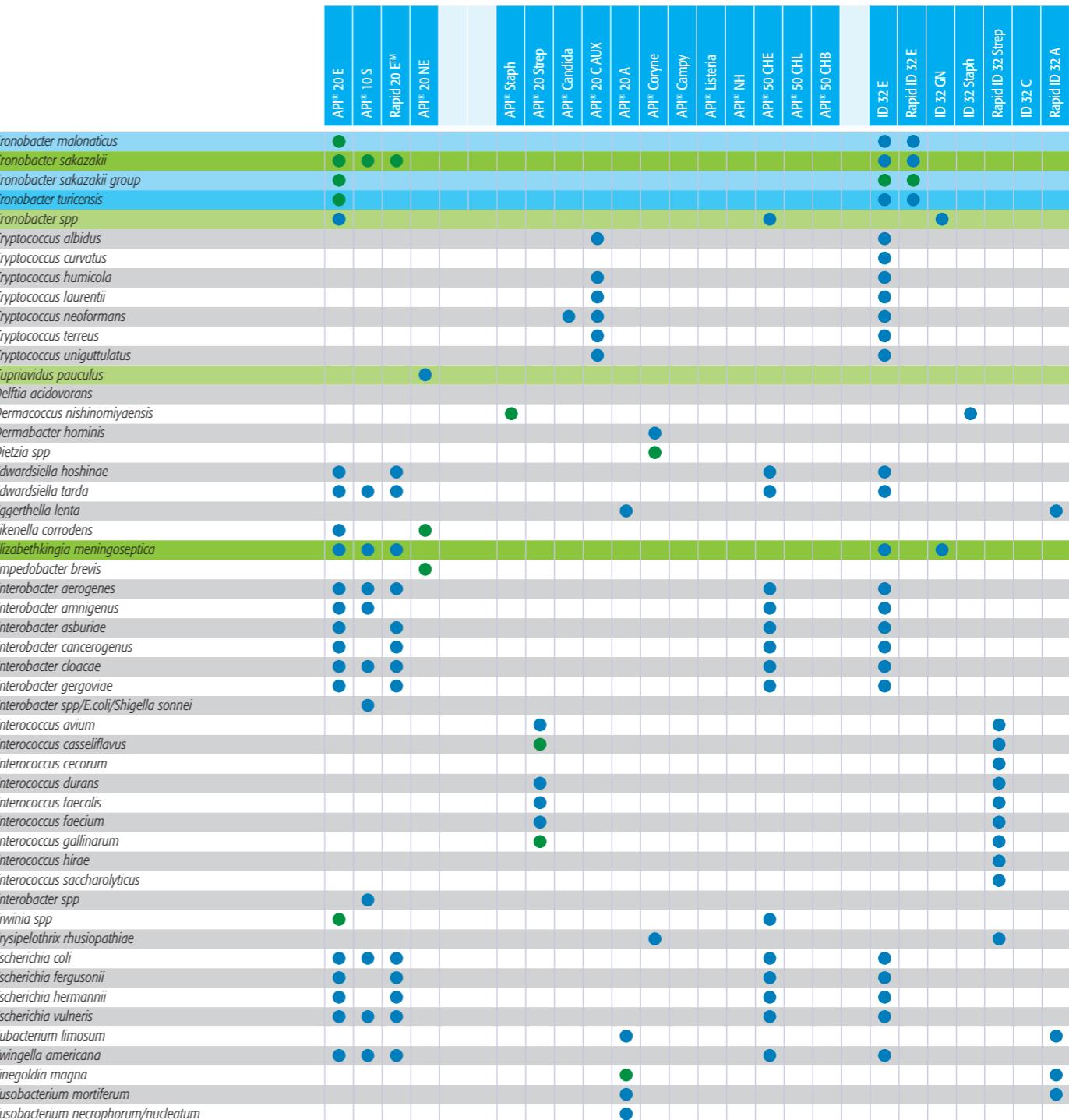
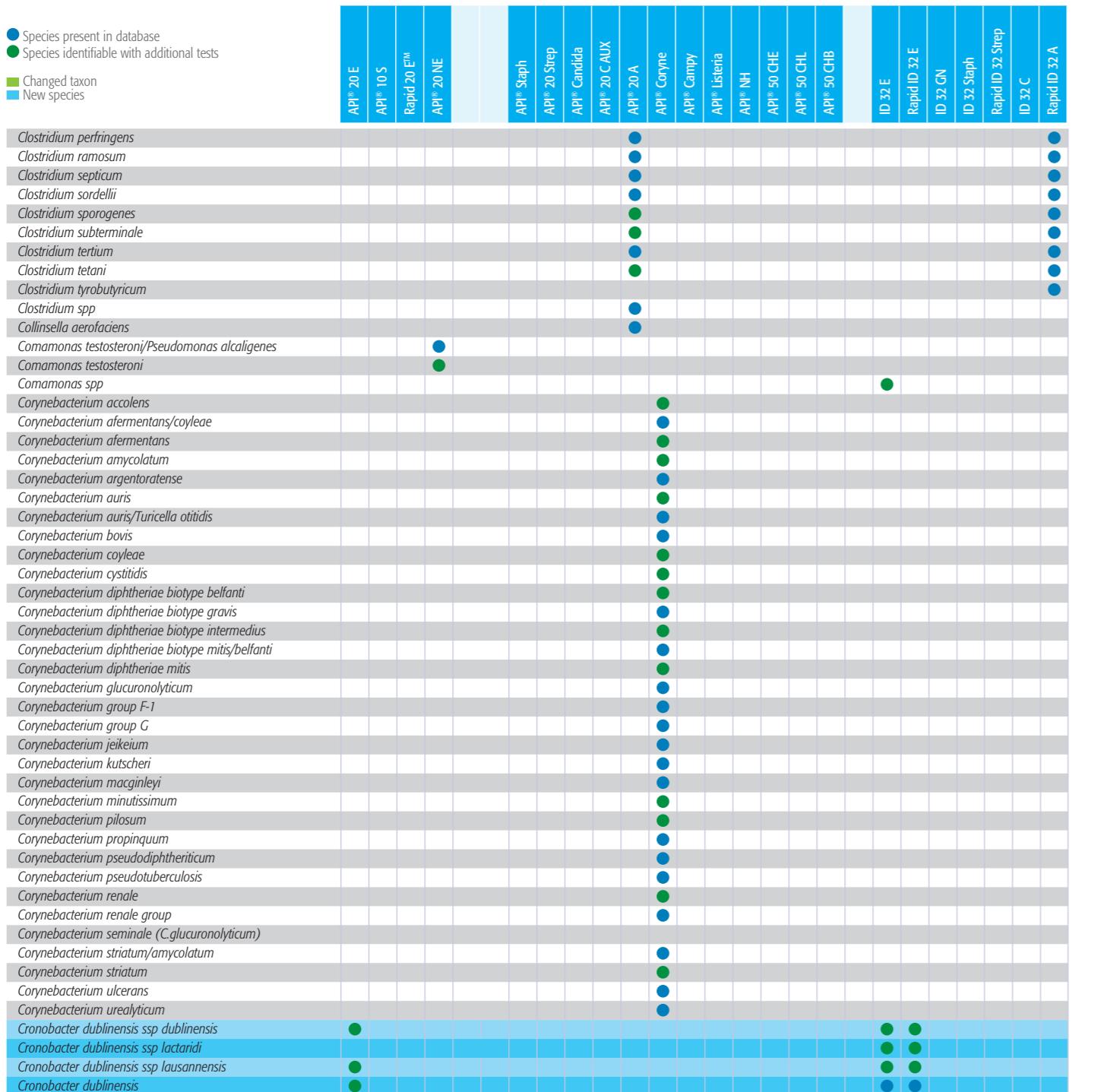
# SPECIES IDENTIFIABLE BY THE VARIOUS IDENTIFICATION SYSTEMS

API® 20 E	Gram-negative bacilli
API® 10 S	Gram-negative bacilli
Rapid 20E™	<i>Enterobacteriaceae</i>
API® 20 NE	Gram-negative non- <i>Enterobacteriaceae</i>
API® Staph	Staphylococci
API® 20 Strep	Streptococci
API® Candida	Yeast
API® 20 C AUX	Yeast
API® 20 A	Anaerobes
API® Coryne	<i>Corynebacteria</i>
API® Campy	<i>Campylobacter</i>
API® Listeria	<i>Listeria</i>
API® NH	<i>Neisseria, Haemophilus</i>
API® 50 CHE	<i>Enterobacteriaceae</i>
AP®I 50 CHL	Lactic bacteria
API® 50 CHB	<i>Bacillus</i>
ID 32 E	Gram-negative bacilli
Rapid ID 32 E	<i>Enterobacteriaceae</i>
ID 32 GN	Gram-negative bacilli
ID 32 STAPH	Staphylococci
Rapid ID 32 STREP	Streptococci
ID 32 C	Yeast
Rapid ID 32 A	Anaerobes

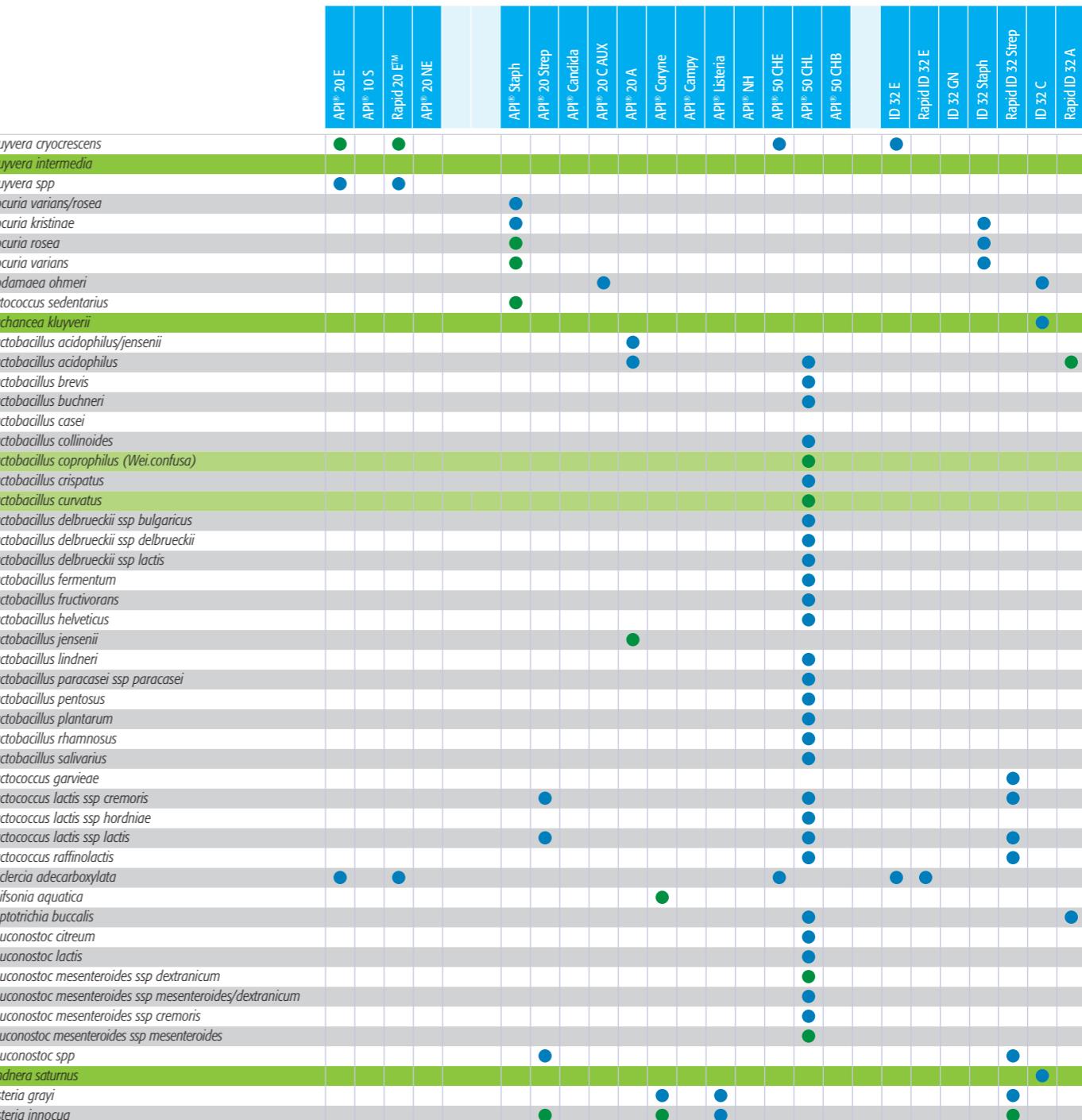
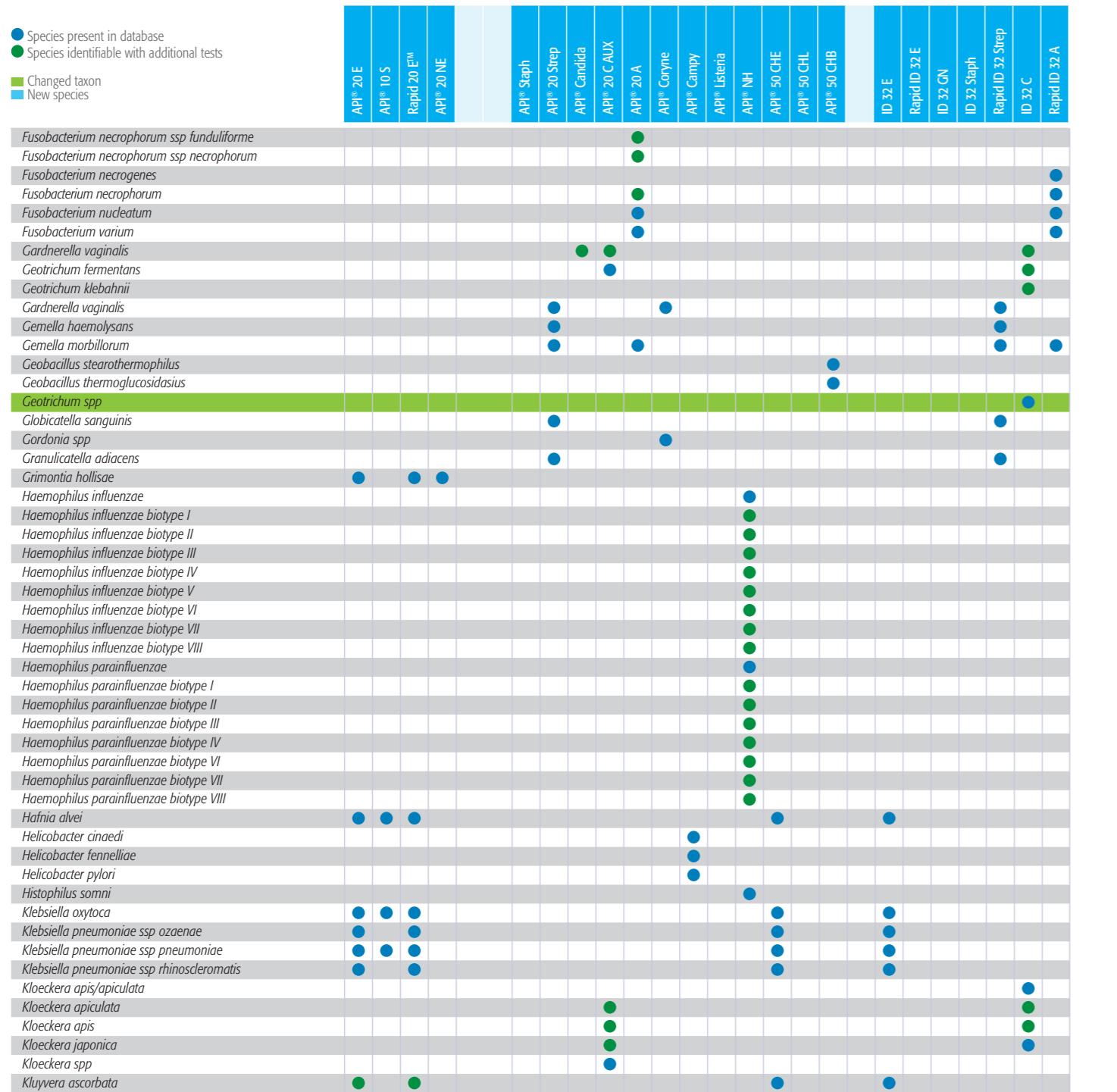


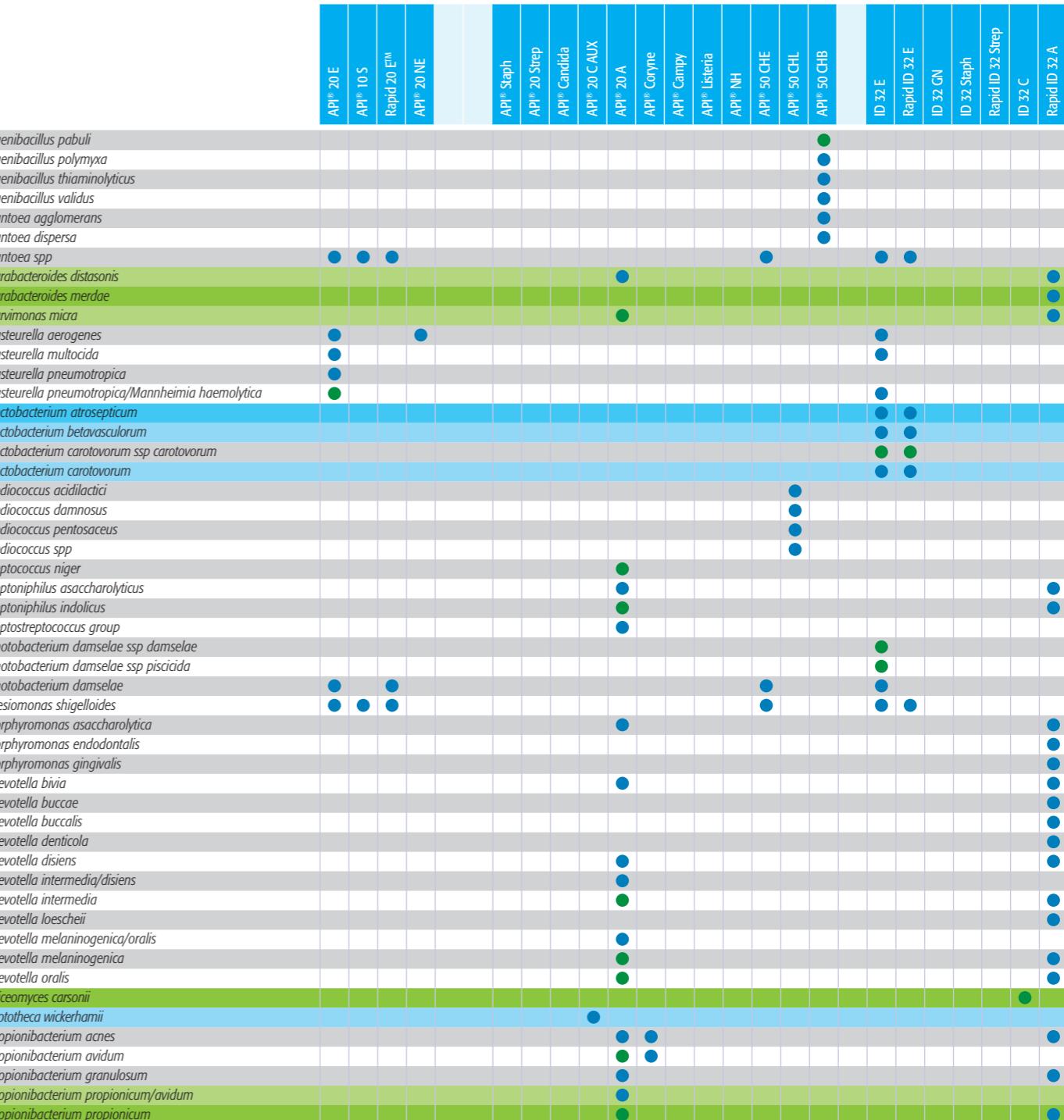
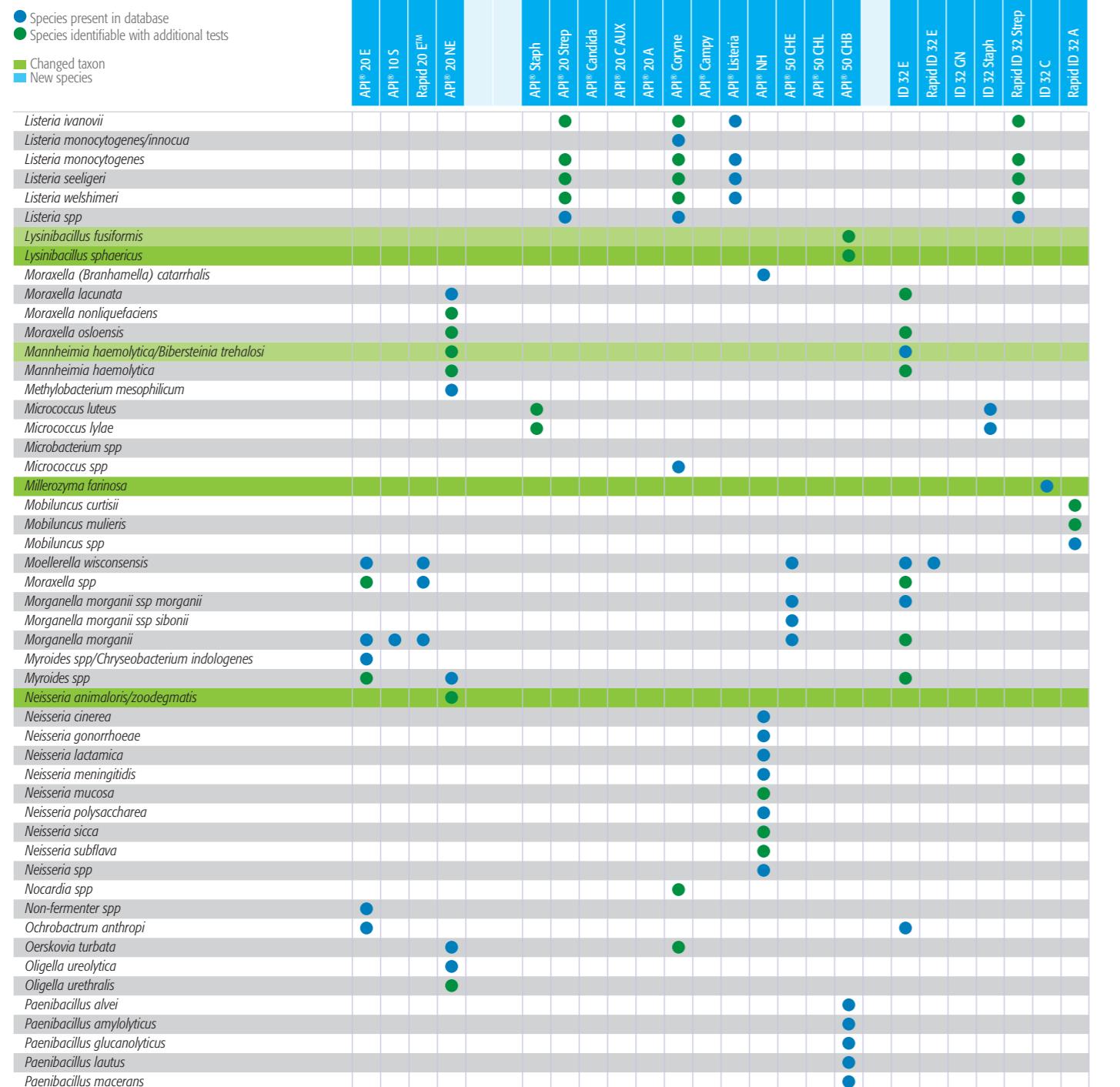


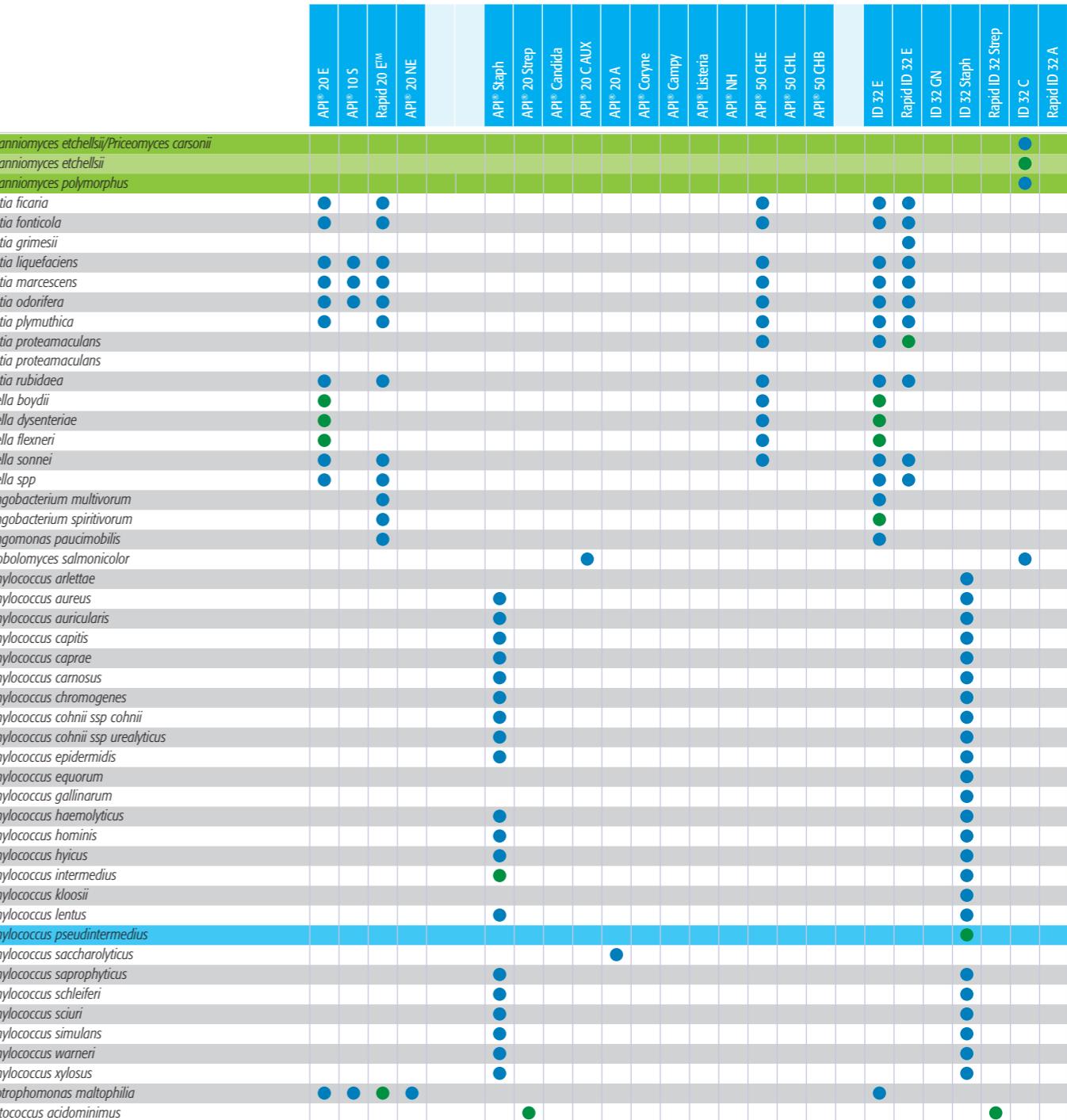
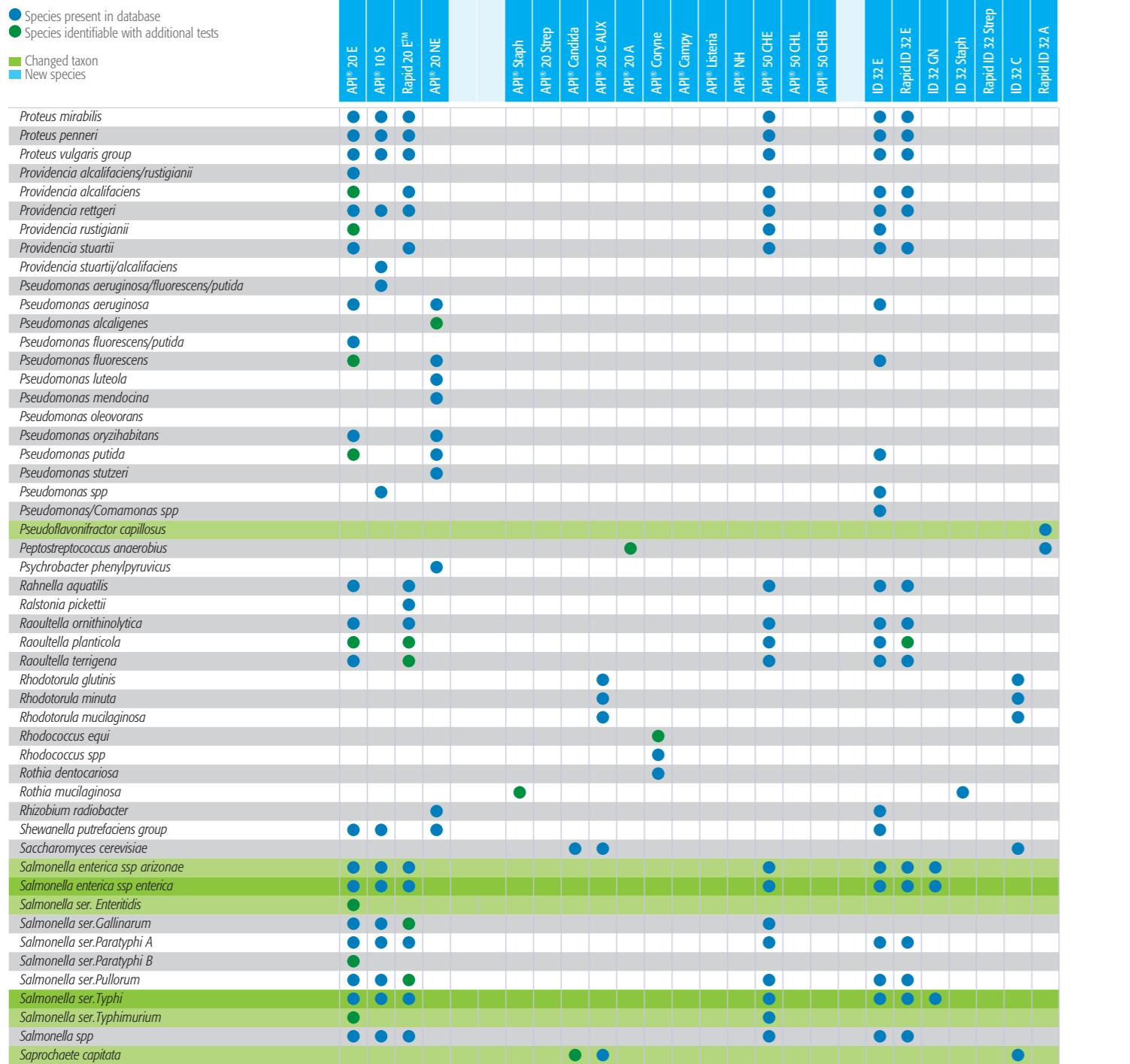
- Species present in database
- Species identifiable with additional tests
- Changed taxon
- New species



- Species present in database
- Species identifiable with additional tests
- Changed taxon
- New species







- Species present in database
- Species identifiable with additional tests

■ Changed taxon  
■ New species

# YEASTS NOMENCLATURE

Name in the database	Imperfect State	Perfect State	Other names
<i>Candida albicans</i>	<i>Candida albicans</i>		
<i>Candida boidinii</i>	<i>Candida boidinii</i>		
<i>Candida catenulata</i>	<i>Candida catenulata</i>		
<i>Candida ciferrii</i>	<i>Candida ciferrii</i>	<i>Trichomonascus ciferrii</i>	<i>Stephanoascus ciferrii</i>
<i>Candida colliculosa</i>	<i>Candida colliculosa</i>	<i>Torulaspora delbrueckii</i>	
<i>Candida dattila</i>	<i>Candida dattila</i>	<i>Lachancea thermotolerans</i>	<i>Kluyveromyces thermotolerans</i>
<i>Candida dubliniensis</i>	<i>Candida dubliniensis</i>		
<i>Candida famata</i>	<i>Candida famata</i>	<i>Debaryomyces hansenii</i>	
<i>Candida glabrata</i>	<i>Candida glabrata</i>		
<i>Candida globosa</i>	<i>Candida globosa</i>	<i>Citeromyces matritensis</i>	
<i>Candida guilliermondii</i>	<i>Candida guilliermondii</i>	<i>Meyerozyma guilliermondii</i>	
<i>Candida hellenica</i>	<i>Candida hellenica</i>	<i>Zygoascus meyerae</i>	
<i>Candida holmii</i>	<i>Candida holmii</i>	<i>Kazachstania exigua</i>	<i>Saccharomyces exiguum</i>
<i>Candida inconspicua</i>	<i>Candida inconspicua</i>		
<i>Candida intermedia</i>	<i>Candida intermedia</i>		
<i>Candida kefir</i>	<i>Candida kefir</i>	<i>Kluyveromyces marxianus</i>	
<i>Candida krusei</i>	<i>Candida krusei</i>	<i>Pichia kudriavzevii</i>	
<i>Candida lambica</i>	<i>Candida lambica</i>	<i>Pichia fermentans</i>	
<i>Candida lipolytica</i>	<i>Candida lipolytica</i>	<i>Yarrowia lipolytica</i>	
<i>Candida lusitaniae</i>	<i>Candida lusitaniae</i>	<i>Clavispora lusitaniae</i>	
<i>Candida magnoliae</i>	<i>Candida magnoliae</i>		
<i>Candida melibiosica</i>	<i>Candida melibiosica</i>		
<i>Candida membranifaciens</i>	<i>Candida membranifaciens</i>		
<i>Candida norvegensis</i>	<i>Candida norvegensis</i>	<i>Pichia norvegensis</i>	
<i>Candida norvegica</i>	<i>Candida norvegica</i>		
<i>Candida parapsilosis</i>	<i>Candida parapsilosis</i>		
<i>Candida pelliculosa</i>	<i>Candida pelliculosa</i>	<i>Wickerhamomyces anomalus</i>	
<i>Candida pulcherrima</i>	<i>Candida pulcherrima</i>	<i>Metschnikowia pulcherrima</i>	
<i>Candida rugosa</i>	<i>Candida rugosa</i>		
<i>Candida sake</i>	<i>Candida sake</i>		

Name in the database	Imperfect State	Perfect State	Other names
<i>Candida silvicola</i>	<i>Candida silvicola</i>		<i>Nakazawaea holstii</i>
<i>Candida sphaerica</i>	<i>Candida sphaerica</i>		<i>Kluyveromyces lactis</i> var <i>lactis</i>
<i>Candida thermophila</i>	<i>Candida thermophila</i>		<i>Ogataea polymorpha</i>
<i>Candida tropicalis</i>	<i>Candida tropicalis</i>		<i>Hansenula polymorpha</i> , <i>Pichia angusta</i>
<i>Candida utilis</i>	<i>Candida utilis</i>		<i>Lindnera jadinii</i>
<i>Candida valida</i>	<i>Candida valida</i>		<i>Pichia membranifaciens</i>
<i>Candida zeylanoides</i>	<i>Candida zeylanoides</i>		
<i>Cryptococcus albidus</i>	<i>Cryptococcus albidus</i>		
<i>Cryptococcus curvatus</i>	<i>Cryptococcus curvatus</i>		
<i>Cryptococcus humicola</i>	<i>Cryptococcus humicola</i>		
<i>Cryptococcus laurentii</i>	<i>Cryptococcus laurentii</i>		
<i>Cryptococcus neoformans</i>	<i>Cryptococcus neoformans</i>		<i>Filobasidiella neoformans</i>
<i>Cryptococcus terreus</i>	<i>Cryptococcus terreus</i>		
<i>Cryptococcus uniguttulatus</i>	<i>Cryptococcus uniguttulatus</i>		<i>Filobasidium uniguttulatus</i>
<i>Geotrichum candidum</i>	<i>Geotrichum candidum</i>		<i>Galactomyces candidus</i>
<i>Geotrichum fermentans</i>	<i>Geotrichum fermentans</i>		
<i>Geotrichum klebahnii</i>	<i>Geotrichum klebahnii</i>		
<i>Kloeckera apiculata</i>	<i>Kloeckera apiculata</i>		<i>Hanseniaspora uvarum</i>
<i>Kloeckera apis</i>	<i>Kloeckera apis</i>		<i>Hanseniaspora guilliermondii</i>
<i>Kloeckera japonica</i>	<i>Kloeckera japonica</i>		<i>Hanseniaspora valbyensis</i>
<i>Kodamaea ohmeri</i>	<i>Kodamaea ohmeri</i>		
<i>Lachancea kluyverii</i>			<i>Lachancea kluyverii</i>
<i>Lindnera saturnus</i>			<i>Lindnera saturnus</i>
<i>Millerozyma farinosa</i>	<i>Millerozyma farinosa</i>		
<i>Priceomyces carsonii</i>			<i>Pichia carsonii</i>
<i>Prototheca wickerhamii</i>	<i>Prototheca wickerhamii</i>		
<i>Rhodotorula glutinis</i>	<i>Rhodotorula glutinis</i>		
<i>Rhodotorula minuta</i>	<i>Rhodotorula minuta</i>		
<i>Rhodotorula mucilaginosa</i>	<i>Rhodotorula mucilaginosa</i>		
<i>Saccharomyces cerevisiae</i>			<i>Saccharomyces cerevisiae</i>
<i>Saprochaete capitata</i>	<i>Saprochaete capitata</i>		<i>Magnusiomyces capitatus</i>
<i>Schwanniomyces etchellsii</i>			<i>Schwanniomyces etchellsii</i>
<i>Schwanniomyces polymorphus</i>			<i>Schwanniomyces polymorphus</i>
<i>Sporobolomyces salmonicolor</i>	<i>Sporobolomyces salmonicolor</i>		<i>Sporidiobolus salmonicolor</i>
<i>Trichosporon asahii</i>	<i>Trichosporon asahii</i>		
<i>Trichosporon asteroides</i>	<i>Trichosporon asteroides</i>		
<i>Trichosporon inkin</i>	<i>Trichosporon inkin</i>		
<i>Trichosporon mucoides</i>	<i>Trichosporon mucoides</i>		
<i>Trichosporon ovoides</i>	<i>Trichosporon ovoides</i>		

# REAGENTS TO BE ORDERED

	20100	20700	10100	20050	20500	20600	20900	10300	10500	20210	20300	20800	10400	25200	50300 - 50430	- 20100	50300 - 50410
ADDITIONAL REAGENTS																	
Zn (2x10g)	X			X												X	
TDA (2x1 ampule)	1/8		1/4													1/20	
VP 1	1/8	1/8			1/8	1/8											1/20
VP 2 (2x2 ampules)																	
NIT 1	1/8			1/4	1/8	1/8		1/20									1/20
NIT 2 (2x2 ampules)																	
ZYM A (2x1 ampule)					1/8	1/8	1/20				1/20					1/5	
ZYM B (2x1 ampule)						1/8	1/8	1/20								1/5	
NIN (2 ampules)								1/4									
BCP (1 ampule)											1/2	1/4					
EHR (1 ampule)											1/2						
XYL (2 ampules)											1/8						
James (2x1 ampule)	1/8	1/8	1/4	1/8												1/20	
FB (2x1 ampule)																	
PYZ (2 ampules)							1/20	X				1/4					
SUSPENSION MEDIUM																	
NaCl 0.85% Medium (5 ml)												X				1/10	
NaCl 0.85% Medium (3 ml)												X					
NaCl 0.85% Medium (2 ml)			1/4			1/4											
Suspension Medium (5 ml)	1/4		1/2										1/4			1/10	
Suspension Medium (2 ml)				1/4			1/4						1/10			1/10	
ADDITIONAL PRODUCTS																	
Oxidase Reagent	X	X	X	X								X					
API® OF Medium					X												
API® M Medium					X												
Paraffin oil	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rack of 12 ampules	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sterile PSIpettes (5ml)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Swabs						X	X		X		X	X	X		X		X
Mc Farland standard			X		X	X	X	X	X	X	X	X	X	X	X	X	X

\*figures = recommended quantity of additional reagent(s) for each strip kit ordered  
(eg. TDA = 1/8 => 1/8 of kit ref. 70402 (2 TDA ampoules) is required to use one kit of ref. 20100 (25 API 20 E strips))

X = additional product required  
(a) : for the API 20 E strip, use the additional reagent kit ref. 20120 (7 ampules)

# REAGENTS TO BE ORDERED

	ID 32 Staph	ID 32 C	ID 32 E	Rapid ID 32 E	Rapid ID 32 A	Rapid ID 32 Strep
ADDITIONAL REAGENTS						
VP A VP B (2x2 ampules)	1/8					1/8
NIT 1						
NIT 2	1/8					1/8
NIN						1/8
James				1/8	1/8	1/8
FB	1/8				1/8	1/8

# SIMPLIFIED METHODOLOGIES

STRIPS	RÉF	MICRO ORGANISMS	SUSPENSION	MC FARLAND	TRANSFERT	MEDIUM	INCUBATION	ATMOSPHERE
API® 20 E	20100	Enterobacteriaceae and other non-fastidious Gram negative bacilli	NaCl 0.85% Medium 5 ml ou Suspension Medium 5 ml	1 colony	NA	NA	37°C 18-24h/48h	Aerobic
RapiD 20 E	20701	Enterobacteriaceae	NaCl 0.85% Medium 2 ml	0.5 McF	NA	NA	37°C 4h	Aerobic
API® 10 S	10100	Enterobacteriaceae and other non-fastidious Gram negative bacilli	NaCl 0.85% Medium 5 ml ou Suspension Medium 5 ml	1 colony	NA	NA	37°C 18-24h	Aerobic
API® 20 NE	20050	Non-Enterobacteriaceae and non-fastidious Gram negative bacilli	NaCl 0.85% Medium 2 ml	0.5 McF	200 µL	API AUX	30°C 24-48h	Aerobic
API® Staph	20500	Genres Staphylococcus, Kocuria and Micrococcus	API Staph Medium	0.5 McF	NA	Medium	37°C 18-24h	Aerobic
API® 20 Strep	20600	Streptocoques	Suspension Medium 2 ml	4 McF	500 µl	NA	37°C 4h-24h	Aerobic
API® Coryne	20900	Bactéries coryneformes	Suspension Medium 3 ml	>6 McF	500 µl	Medium	37°C 24h	Aerobic
API® Listeria	10300	Listeria	Suspension Medium 2 ml	1 McF	NA	API GP	37°C 24h	Aerobic
API® Candida	10500	Yeast	NaCl 0.85% Medium 2 ml	3 McF	NA	Medium	37°C 18-24h	Aerobic
API® 20 C AUX	20210	Yeast	NaCl 0.85% Medium 2 ml ou Suspension Medium 2 ml	2 McF	100 µl	NA	30°C 48-72h	Aerobic
API® 20 A	20300	Anaerobes	API 20 A Medium	3 McF	NA	NA	37°C 24h	Anaerobic
API® Campy	20800	Campylobacter	NaCl 0.85 % Medium 3 ml	6 McF	150 µl	API C	37°C 24h	Aerobic/CO <sub>2</sub>
API® NH	10400	Neisseria – Haemophilus and Moraxella ( <i>Branhamella</i> ) catarrhalis	NaCl 0.85% Medium 2 ml	4 McF	NA	Medium	37°C 2h	Aerobic
API® ZYM	25200	Semi-quantitative enzyme activity tests	NaCl 0.85% Medium 2 ml ou Suspension Medium 2 ml	5-6 McF	NA	NA	37°C 4h	Aerobic
API® 50 CH API® 50 CHB/E	50300 50430	Bacillus	NaCl 0.85% Medium 5 ml + API 50 CHB/E Medium	2 McF 2 McF	NA	API AUX	30°C 24-48h 55°C 3/6-24h	Aerobic
API® 50 CH API® 50 CHB/E	50300 50430	Enterobacteriaceae	NaCl 0.85% Medium 5 ml + API 50 CHB/E Medium	0.5 McF 0.5 McF	NA	Medium	37°C 24-48h	Aerobic
API® 50 CH API® 50 CHL	50300 50410	Lactobacillus	API 50 CHL Medium	2 McF	NA	NA	30/37°C 48h	Aerobic

# SIMPLIFIED METHODOLOGIES

STRIPS	RÉF	BACTERIA	SUSPENSION INOCULATOR 3 ML MANUAL 2 ML	MC FARLAND	TRANSFERT	MEDIUM	VOLUME DISPENSED	TEMP. INCUBATION	ATMOSPHERE
Rapid ID 32 E	32700	Enterobacteriaceae	NaCl 0.85% Medium	0.5	NA	NA	55 µl x 32	37°C 4h	Aerobic
Rapid ID 32 A	20701	Enterobacteriaceae	Suspension Medium	0.5 McF	NA	NA	55 µl x 32	37°C 4h	Aerobic
ID 32 E	10100	Streptococci	Suspension Medium	1 colonie	NA	NA	55 µl x 32	37°C 4h	Aerobic
ID 32 STAPH	20050	Enterobacteriaceae Non Enterobacteriaceae	NaCl 0.85% Medium	0.5 McF	NA	NA	55 µl x 32	37°C 24h	Aerobic + humidity
API® Staph	20500	Staphylococci	Suspension Medium	0.5 McF	NA	NA	55 µl x 32	37°C 24h	Aerobic + humidity
ID 32 C	20600	Yeast	Suspension Medium	4 McF	250 µl	API C Medium	135 µl x 32	30°C 24/48h	Aerobic + humidity

# BIBLIOGRAPHY

## 1 • Elizabethkingia meningoseptica

KIM (K.K.), KIM (M.K.), LIM (J.H.), PARK (H.Y.) and LEE (S.T.): Transfer of Chryseobacterium meningosepticum and Chryseobacterium miricola to Elizabethkingia gen. nov. as Elizabethkingia meningoseptica comb. nov. and Elizabethkingia miricola comb. nov. Int. J. Syst. Evol. Microbiol., 2005, 55, 1287-1293.

## 2 • Kluyvera intermedia

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## 3 • Salmonella spp

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