



api *the reference*

API & ID 32 IDENTIFICATION DATABASES

from diagnosis,
the seeds of better health





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INTRODUCTION

To keep up with changing infectious pathologies:

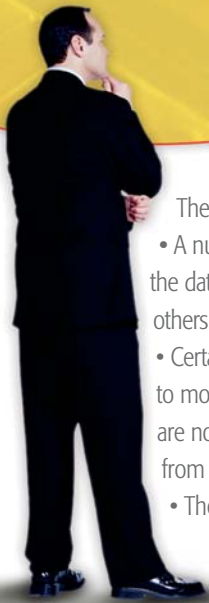
- Emergence of new species
- Acquisition of new biological data
- Development of bacterial resistance
- Increasing prevalence of nosocomial infections and the need for precise epidemiological monitoring

The API and ID 32 databases have again been updated.

Twenty-two of the twenty-three identification databases have been fully revised, taking into account the biochemical profiles of over 7,000 new strains (in addition to the previous profiles) and data from over 150 new publications.

Today, 822 species of bacteria and yeasts can be identified, including 32 new species and 67 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 4.0 | v 4.1 | x | x | - | - |
| RapiD 20 E | v 3.0 | v 3.1 | x | x | - | - |
| API 10 S | v 3.0 | v 3.1 | x | x | - | - |
| API 20 NE | v 6.0 | v 7.0 | x | x | - | x |
| API STAPH | v 4.0 | v 4.1 | x | x | - | - |
| API 20 STREP | v 6.0 | v 7.0 | x | x | x | x |
| API 20 CAUX | v 3.0 | v 4.0 | x | x | x | x |
| API CANDIDA | v 2.0 | v 2.1 | x | - | - | - |
| API 20 A | v 3.0 | v 4.0 | x | x | x | x |
| API CORYNE | v 2.0 | v 3.0 | x | x | - | x |
| API CAMPY | v 2.0 | v 2.1 | x | - | - | - |
| API LISTERIA | v 1.1 | v 1.2 | x | - | - | - |
| API NH | v 2.0 | v 3.0 | x | x | x | x |
| API 50 CHB | v 3.0 | v 4.0 | x | x | x | x |
| API 50 CHE | v 3.0 | v 3.1 | x | x | - | - |
| API 50 CHL | v 5.0 | v 5.1 | x | - | - | - |
| ID 32 E | v 2.0 | v 3.0 | x | x | x | x |
| rapid ID 32 E | v 3.0 | v 3.1 | x | x | - | - |
| ID 32 GN | v 3.0 | v 3.1 | x | x | - | - |
| ID 32 STAPH | v 2.0 | v 2.1 | x | - | - | - |
| rapid ID 32 STREP | v 2.0 | v 3.0 | x | x | x | x |
| ID 32 C | v 2.0 | v 3.0 | x | x | x | x |
| rapid ID 32 A | v 3.1 | v 3.2 | x | x | - | - |

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 | Yeasts |
| API 20 C AUX | Yeasts |
| API 20 A | Anaerobes |
| API Coryne | Corynebacteria |
| API Campy | <i>Campylobacter</i> |
| API Listeria | <i>Listeria</i> |
| API NH | <i>Neisseria, Haemophilus</i> |
| API 50 CHE | <i>Enterobacteriaceae</i> |
| API 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 | Yeasts |
| Rapid ID 32 A | Anaerobes |

| | API 20 E | API 10 S | Rapid 20 E | API 20 NE | API Staph | API 20 Strep | API Candida | API 20 C AUX | API 20 A | API Coryne | API Campy | API Listeria | API NH | API 50 CHE | API 50 CHL | API 50 CHB | ID 32 E | Rapid ID 32 E | ID 32 GN | ID 32 Staph | Rapid ID 32 Strep | ID 32 C | Rapid ID 32 A |
|---|----------|----------|------------|-----------|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Abiotrophia defectiva</i> | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Achromobacter denitrificans</i> | | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Achromobacter xylosoxidans</i> | | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Acinetobacter baumannii</i> | T | ▲ | | T | | | | | | | | | | | | | | ▲ | | | | | |
| <i>Acinetobacter baumannii/calcoaceticus</i> | ▲ | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Acinetobacter calcoaceticus</i> | T | | | T | | | | | | | | | | | | | | | | | | | |
| <i>Acinetobacter haemolyticus</i> | | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Acinetobacter johnsonii</i> | | | | T | | | | | | | | | | | | | | | | | | | |
| <i>Acinetobacter junii</i> | | | | T | | | | | | | | | | | | | | | | | | | |
| <i>Acinetobacter junii/johnsonii</i> | | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Acinetobacter lwoffii</i> | | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Acinetobacter radioresistens</i> | | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Acinetobacter</i> spp | | | T | | | | | | | | | | | | | | | T | | | | | |
| <i>Acinetobacter/Moraxella</i> spp | | | | | | | | | | | | | | | | | | ▲ | | | | | |
| <i>Acinetobacter/Pseudomonas</i> spp | | | ▲ | | | | | | | | | | | | | | | | ▲ | | | | |
| <i>Actinobacillus pleuropneumoniae</i> *** | | | | | | | | | | | | | | ▲ | | | | | | | | | |
| <i>Actinomyces israelii</i> | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Actinomyces meyeri</i> | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Actinomyces meyeri/odontolyticus</i> | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Actinomyces naeslundii</i> | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Actinomyces neuii</i> ssp <i>anitratu</i> s | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Actinomyces neuii</i> ssp <i>neuii</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Actinomyces odontolyticus</i> | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Actinomyces radingae</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Actinomyces turicensis</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Actinomyces viscosus</i> | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Aerococcus urinae</i> *** | | | | | | ▲ | | | | | | | | | | | | | | | | | ▲ |
| <i>Aerococcus viridans</i> | | | | | | ▲ | | | | | | | | | | | | | | | | | ▲ |
| <i>Aeromonas caviae</i> | T | | | T | | | | | | | | | | | ▲ | ▲ | | T | | | | | |
| <i>Aeromonas hydrophila</i> | T | ▲ | ▲ | T | | | | | | | | | | | ▲ | | | T | | | | | |
| <i>Aeromonas hydrophila/caviae/sobria</i> | ▲ | | | ▲ | | | | | | | | | | | | | | ▲ | | | | | |
| <i>Aeromonas hydrophila/caviae/sobria</i> <i>Aeromonas hydrophila</i> group | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Aeromonas salmonicida masoucida/achromogenes</i> | | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Aeromonas salmonicida</i> ssp <i>achromogenes</i> | | | | T | | | | | | | | | | | | | | | | | | | |
| <i>Aeromonas salmonicida</i> ssp <i>masoucida</i> | | | | T | | | | | | | | | | | | | | | | | | | |
| <i>Aeromonas salmonicida</i> ssp <i>salmonicida</i> | ▲ | | | ▲ | | | | | | | | | | | ▲ | | | | | | | | |
| <i>Aeromonas sobria</i> | T | | | ▲ | | | | | | | | | | | ▲ | | | | | | | | |
| <i>Alcaligenes faecalis</i> | | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Alcaligenes</i> spp | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Alloiooccus otitis</i> | | | | | | ▲ | | | | | | | | | | | | | | | | | |
| <i>Anaerobiospirillum succiniciproducens</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Anaerococcus prevotii</i> <i>Peptostreptococcus prevotii</i> | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Aneurinibacillus aneurinilyticus</i> | | | | | | | | | | | | | | | | ▲ | | | | | | | |
| <i>Arcanobacterium bernardiae</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Arcanobacterium haemolyticum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Arcanobacterium pyogenes</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Arcobacter cryaerophilus</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | |

changed taxonomy former taxonomy

new species

species described below ***

species present in database ▲

species identifiable with additional tests T

| | API 20 E | API 10 S | Rapid 20 E | API 20 NE | | API Staph | API 20 Strep | API Candida | API 20 C AUX | API 20 A | API Coryne | API Campy | API Listeria | API NH | API 50 CHE | API 50 CHL | API 50 CHB | ID 32 E | Rapid ID 32 E | ID 32 GN | ID 32 Staph | Rapid ID 32 Strep | ID 32 C | Rapid ID 32 A |
|---|----------|----------|------------|-----------|--|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Arthrobacter</i> spp | | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Bacillus amyloliquefaciens</i> | | | | | | | | | | | | | | | | | | T | | | | | | |
| <i>Bacillus anthracis</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus badius</i> | | | | | | | | | | | | | | | | | | T | | | | | | |
| <i>Bacillus cereus</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus circulans</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus coagulans</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus firmus</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus fusiformis</i> | | | | | | | | | | | | | | | | | | T | | | | | | |
| <i>Bacillus lentus</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus licheniformis</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus megaterium</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus mycoides</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus non reactive</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus pumilus</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus smithii</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus sphaericus</i> | | | | | | | | | | | | | | | | | | T | | | | | | |
| <i>Bacillus subtilis</i> | | | | | | | | | | | | | | | | | | T | | | | | | |
| <i>Bacillus subtilis/amyloliquefaciens</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Bacillus thuringiensis</i> | | | | | | | | | | | | | | | | | | T | | | | | | |
| <i>Bacteroides caccae</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Bacteroides capillosus</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Bacteroides distasonis</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Bacteroides eggerthii</i> | | | | | | | | | | | T | | | | | | | | | | | | | ▲ |
| <i>Bacteroides fragilis</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Bacteroides merdae</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Bacteroides ovatus</i> | | | | | | | | | | | T | | | | | | | | | | | | | ▲ |
| <i>Bacteroides ovatus/thetaiotaomicron</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Bacteroides stercoris</i> | | | | | | | | | | | T | | | | | | | | | | | | | ▲ |
| <i>Bacteroides stercoris/eggerthii</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Bacteroides thetaiotaomicron</i> | | | | | | | | | | | T | | | | | | | | | | | | | ▲ |
| <i>Bacteroides uniformis</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Bacteroides ureolyticus</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Bacteroides vulgatus</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Bergeyella zoohelcum</i> | | | | ▲ | | | | | | | | | | | | | | | T | | | | | ▲ |
| <i>Bifidobacterium adolescentis</i> | | | | | | | | | | | T | | | | | | | | | | | | | ▲ |
| <i>Bifidobacterium bifidum</i> | | | | | | | | | | | T | | | | | | | | | | | | | T |
| <i>Bifidobacterium breve</i> | | | | | | | | | | | T | | | | | | | | | | | | | T |
| <i>Bifidobacterium dentium</i> | | | | | | | | | | | T | | | | | | | | | | | | | ▲ |
| <i>Bifidobacterium longum</i> <i>Bifidobacterium infantis</i> | | | | | | | | | | | | | | | | | | | | | | | | T |
| <i>Bifidobacterium</i> spp | | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ |
| <i>Bordetella avium</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Bordetella bronchiseptica</i> | | | | | | | | | | | | | | | | | | | ▲ | | ▲ | | | |
| <i>Bordetella</i> spp | | | | | | | | | | | | | | | | | | | T | | | | | |
| <i>Bordetella/Alcaligenes/Moraxella</i> spp | | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Brevibacillus agri</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Brevibacillus borstelensis</i> | | | | | | | | | | | | | | | | | | T | | | | | | |

changed taxonomy former taxonomy

new species

species described below ...

species present in database ▲

species identifiable with additional tests T

| | API 20 E | API 10 S | Rapid 20 E | API 20 NE | | API Staph | API 20 Strep | API Candida | API 20 C AUX | API 20 A | API Coryne | API Campy | API Listeria | API NH | API 50 CHE | API 50 CHL | API 50 CHB | | ID 32 E | Rapid ID 32 E | ID 32 GN | ID 32 Staph | Rapid ID 32 Strep | ID 32 C | Rapid ID 32 A | |
|--|----------|----------|------------|-----------|--|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|--|---------|---------------|----------|-------------|-------------------|---------|---------------|--|
| <i>Brevibacillus brevis</i> | | | | | | | | | | | | | | | | | T | | | | | | | | | |
| <i>Brevibacillus centrosporus</i> | | | | | | | | | | | | | | | | | T | | | | | | | | | |
| <i>Brevibacillus choshinensis</i> | | | | | | | | | | | | | | | | | T | | | | | | | | | |
| <i>Brevibacillus laterosporus</i> | | | | | | | | | | | | | | | | | T | | | | | | | | | |
| <i>Brevibacillus non reactive</i> | | | | | | | | | | | | | | | | | T | | | | | | | | | |
| <i>Brevibacterium casei</i> | | | | | | | | | | | T | | | | | | | | | | | | | | | |
| <i>Brevibacterium epidermidis</i> | | | | | | | | | | | T | | | | | | | | | | | | | | | |
| <i>Brevibacterium spp</i> | | | | | | | | | | | T | | | | | | | | | | | | | | | |
| <i>Brevundimonas diminuta</i> | | | | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Brevundimonas diminuta/Oligella urethralis</i> | | | | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Brevundimonas vesicularis</i> | | | | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Brochothrix thermosphacta</i> | | | | | | | | | | | | | | | | | T | | | | | | | | | |
| <i>Brucella spp</i> | T | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Budvicia aquatica</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Burkholderia cepacia</i> | T | | T | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Burkholderia gladioli</i> | | | | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Burkholderia pseudomallei</i> | | | | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Buttiauxella agrestis</i> | T | | T | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter coli</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter fetus ssp fetus</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter fetus ssp venerealis</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter hyointestinalis</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter jejuni ssp doylei</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter jejuni ssp jejuni</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter lari</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter lari UPTC</i> "Campylobacter lari ssp UPTC" | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter mucosalis</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter sputorum</i> <i>bv Fecalis</i> "Campylobacter sputorum Fecalis" | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter sputorum ssp bubulus</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Campylobacter upsaliensis</i> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Candida albicans</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida boidinii</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida catenulata</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida colliculosa</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida dattila</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida dubliniensis</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida famata</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida glabrata</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida globosa</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida guilliermondii</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida hellenica</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida holmii</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida inconspicua</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida inconspicua/norvegensis</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida intermedia</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida kefyr</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |
| <i>Candida krusei</i> | | | | | | | | T | T | | | | | | | | | | | | | | | | | |

changed taxonomy former taxonomy
new species
 species described below ...
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 species identifiable with additional tests T

| | API 20 E | API 10 S | Rapid 20 E | API 20 NE | API Staph | API 20 Strep | API Candida | API 20 C AUX | API 20 A | API Coryne | API Campy | API Listeria | API NH | API 50 CHE | API 50 CHL | API 50 CHB | ID 32 E | Rapid ID 32 E | ID 32 GN | ID 32 Staph | Rapid ID 32 Strep | ID 32 C | Rapid ID 32 A | |
|--|----------|----------|------------|-----------|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|---|
| <i>Candida krusei/inconspicua</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | | |
| <i>Candida lambica</i> | | | | | | | | T | | | | | | | | | | | | | | | | ▲ |
| <i>Candida lipolytica</i> | | | | | | | | T | | | | | | | | | | | | | | | | ▲ |
| <i>Candida lusitanae</i> | | | | | | | ▲ | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida magnoliae</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida melibiosica</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida membranifaciens</i> <i>Candida membranaefaciens</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Candida norvegensis</i> | | | | | | | T | ▲ | | | | | | | | | | | | | | | | T |
| <i>Candida norvegica</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Candida parapsilosis</i> | | | | | | | ▲ | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida pelliculosa</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida pulcherrima</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Candida rugosa</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida sake</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Candida silvicola</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Candida sphaerica</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida tropicalis</i> | | | | | | | ▲ | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida utilis</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida valida</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Candida zeylanoides</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Capnocytophaga gingivalis</i> | | | | | | | | | | | | | | | | | | | | | | | | T |
| <i>Capnocytophaga ochracea</i> | | | | | | | | | | | | | | | | | | | | | | | | T |
| <i>Capnocytophaga</i> spp | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Capnocytophaga sputigena</i> | | | | | | | | | | | | | | | | | | | | | | | | T |
| <i>Carnobacterium divergens</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Carnobacterium maltaromaticum</i> <i>Carnobacterium piscicola</i> | | | | | | | | | | | | | | | | | ▲ | | | | | | | ▲ |
| CDC group EF-4 (<i>Pasteurella</i>) | | | | | | | | | | | | | | | | | ▲ | | | | | | | |
| <i>Cedecea davisae</i> | ▲ | | T | | | | | | | | | | | | | ▲ | | ▲ | ▲ | T | | | | |
| <i>Cedecea lapagei</i> | ▲ | | T | | | | | | | | | | | | | | | ▲ | ▲ | T | | | | |
| <i>Cedecea lapagei/heteri</i> | | | | | | | | | | | | | | | | ▲ | | | | | | | | |
| <i>Cedecea neteri</i> | | | | | | | | T | | | | | | | | | | ▲ | ▲ | T | | | | |
| <i>Cedecea</i> spp | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Cellulomonas</i> spp | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Cellulomonas</i> spp/ <i>Microbacterium</i> spp | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Cellulosimicrobium cellulans</i> <i>Oerskovia xanthineolytica</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Chromobacterium violaceum</i> | ▲ | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Chryseobacterium indologenes</i> | ▲ | ▲ | | | | | | ▲ | | | | | | | | | | ▲ | ▲ | | | | | ▲ |
| <i>Chryseobacterium meningosepticum</i> | ▲ | ▲ | | | | | | ▲ | | | | | | | | | | ▲ | ▲ | | | | | ▲ |
| <i>Citrobacter amalonaticus</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Citrobacter amalonaticus/farmeri</i> | T | | | | | | | | | | | | | | | | | T | T | T | | | | |
| <i>Citrobacter braakii</i> | ▲ | ▲ | | | | | | | | | | | | | | | | ▲ | ▲ | ▲ | | | | |
| <i>Citrobacter farmeri</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Citrobacter freundii</i> | T | ▲ | | | | | | | | | | | | | | | | T | T | T | | | | |
| <i>Citrobacter freundii</i> group | ▲ | ▲ | | | | | | | | | | | | | | | | ▲ | ▲ | ▲ | | | | |
| <i>Citrobacter freundii</i> group | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Citrobacter koseri</i> | T | | | | | | | | | | | | | | | | | ▲ | ▲ | ▲ | | | | |
| <i>Citrobacter koseri/amalonaticus</i> | ▲ | ▲ | | | | | | | | | | | | | | | | ▲ | ▲ | ▲ | | | | |
| <i>Citrobacter koseri/farmeri</i> | ▲ | | | | | | | | | | | | | | | | | | | | | | | |

changed taxonomy *former taxonomy*
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|---|----------|----------|------------|-----------|--|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Citrobacter sedlakii</i> | | | | | | | | | | | | | | | | | | ▲ | ▲ | | | | | |
| <i>Citrobacter youngae</i> | ▲ | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Clostridium acetobutylicum</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Clostridium baratii</i> <i>Clostridium barati</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium beijerinckii</i> | | | | | | | | | | T | | | | | | | | | | | | | | T |
| <i>Clostridium beijerinckii/butyricum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium bifementans</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium botulinum</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Clostridium botulinum/sporogenes</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium butyricum</i> | | | | | | | | | | T | | | | | | | | | | | | | | T |
| <i>Clostridium cadaveris</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium clostridioforme</i> <i>Clostridium clostridioforme</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium difficile</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium fallax</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium glycolicum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium histolyticum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium innocuum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium limosum</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Clostridium paraputrificum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium perfringens</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium ramosum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium septicum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium sordellii</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium sporogenes</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Clostridium spp</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium subterminale</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Clostridium tertium</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Clostridium tetani</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Clostridium tyrobutyricum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Collinsella aerofaciens</i> <i>Eubacterium aerofaciens</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Comamonas spp</i> | | | | | | | | | | | | | | | | | | | T | | | | | |
| <i>Comamonas testosteroni</i> | | | | | | | | | | | | | | | | | | | | ▲ | | | | |
| <i>Comamonas testosteroni/Pseudomonas alcaligenes</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Corynebacterium accolens</i> | | | | | | | | | | | | ▲ | | | | | | | | | | | | |
| <i>Corynebacterium afermentans</i> | | | | | | | | | | | | T | | | | | | | | | | | | |
| <i>Corynebacterium afermentans/coyleae</i> | | | | | | | | | | | | ▲ | | | | | | | | | | | | |
| <i>Corynebacterium amycolatum</i> | | | | | | | | | | | | T | | | | | | | | | | | | |
| <i>Corynebacterium argentoratense</i> | | | | | | | | | | | | ▲ | | | | | | | | | | | | |
| <i>Corynebacterium auris</i> | | | | | | | | | | | | T | | | | | | | | | | | | |
| <i>Corynebacterium auris/Turicella otitidis</i> | | | | | | | | | | | | ▲ | | | | | | | | | | | | |
| <i>Corynebacterium bovis</i> | | | | | | | | | | | | ▲ | | | | | | | | | | | | |
| <i>Corynebacterium coyleae</i> | | | | | | | | | | | | T | | | | | | | | | | | | |
| <i>Corynebacterium cystitidis</i> | | | | | | | | | | | | T | | | | | | | | | | | | |
| <i>Corynebacterium diphtheriae</i> biotype <i>belfanti</i> | | | | | | | | | | | | T | | | | | | | | | | | | |
| <i>Corynebacterium diphtheriae</i> biotype <i>gravis</i> | | | | | | | | | | | | ▲ | | | | | | | | | | | | |
| <i>Corynebacterium diphtheriae</i> biotype <i>intermedius</i> | | | | | | | | | | | | T | | | | | | | | | | | | |
| <i>Corynebacterium diphtheriae</i> biotype <i>mitis</i> | | | | | | | | | | | | T | | | | | | | | | | | | |

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|---|----------|----------|------------|-----------|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Corynebacterium diphtheriae mitis/belfanti</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium glucuronolyticum</i> <i>C. glucuronolyticum/seminale</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium</i> group F-1 | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium</i> group G | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium jeikeium</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium kutscheri</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium macginleyi</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium minutissimum</i> | | | | | | | | | | T | | | | | | | | | | | | | |
| <i>Corynebacterium pilosum</i> | | | | | | | | | | T | | | | | | | | | | | | | |
| <i>Corynebacterium propinquum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium pseudodiphtheriticum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium pseudotuberculosis</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium renale</i> | | | | | | | | | | T | | | | | | | | | | | | | |
| <i>Corynebacterium renale</i> group | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium seminale</i> | | | | | | | | | | T | | | | | | | | | | | | | |
| <i>Corynebacterium striatum</i> | | | | | | | | | | T | | | | | | | | | | | | | |
| <i>Corynebacterium striatum/amycolatum*</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium ulcerans</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Corynebacterium urealyticum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Cryptococcus albidus</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ |
| <i>Cryptococcus curvatus</i> <i>Candida curvata</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ |
| <i>Cryptococcus humicola</i> <i>Cryptococcus humicolus</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ |
| <i>Cryptococcus laurentii</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ |
| <i>Cryptococcus neoformans</i> | | | | | | | ▲ | ▲ | | | | | | | | | | | | | | | ▲ |
| <i>Cryptococcus terreus</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ |
| <i>Cryptococcus uniguttulatus</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ |
| <i>Debaryomyces carsonii</i> <i>Pichia carsonii</i> | | | | | | | | | | | | | | | | | | | | | | | T |
| <i>Debaryomyces etchellsii</i> <i>Pichia etchellsii</i> | | | | | | | | | | | | | | | | | | | | | | | T |
| <i>Debaryomyces etchellsii/carsonii</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Debaryomyces polymorphus</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Delftia acidovorans</i> <i>Comamonas acidovorans</i> | | | | ▲ | | | | | | | | | | | | | | | ▲ | | | | |
| <i>Dermabacter hominis</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Dermacoccus nishinomiyaensis</i> | | | | | | T | | | | | | | | | | | | | | ▲ | | | |
| <i>Dietzia</i> spp | | | | | | | | | | T | | | | | | | | | | | | | |
| <i>Edwardsiella hoshinae</i> | ▲ | | ▲ | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Edwardsiella tarda</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Eggerthella lenta</i> <i>Eubacterium lentum</i> | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Eikenella corrodens</i> | ▲ | | | | | | | | | | | | | | | | | | | T | | | |
| <i>Empedobacter brevis</i> | | | | | | | | | | | | | | | | | | | | T | | | |
| <i>Enterobacter aerogenes</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Enterobacter amnigenus</i> | ▲ | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Enterobacter asburiae</i> | ▲ | | | ▲ | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Enterobacter cancerogenus</i> | ▲ | | | ▲ | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Enterobacter cloacae</i> | ▲ | | ▲ | ▲ | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Enterobacter gergoviae</i> | ▲ | | ▲ | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Enterobacter intermedius</i> | ▲ | | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Enterobacter sakazakii</i> | ▲ | | | T | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |

changed taxonomy *former taxonomy*

new species

species described below ...

species present in database ▲

species identifiable with additional tests T

*Possibility of *Coryn. freneyi* if α-GLU +

| | API 20 E | API 10 S | Rapid 20 E | API 20 NE | | API Staph | API 20 Strep | API Candida | API 20 C AUX | API 20 A | API Coryne | API Campy | API Listeria | API NH | API 50 CHE | API 50 CHL | API 50 CHB | ID 32 E | Rapid ID 32 E | ID 32 GN | ID 32 Staph | Rapid ID 32 Strep | ID 32 C | Rapid ID 32 A |
|--|----------|----------|------------|-----------|--|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Enterobacter</i> spp/ <i>E.coli</i> / <i>Shigella sonnei</i> | | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Enterococcus avium</i> | | | | | | | ▲ | | | | | | | | | | | | | | | | | |
| <i>Enterococcus casseliflavus</i> | | | | | | | T | | | | | | | | | | | | | | | | | |
| <i>Enterococcus cecorum</i> | | | | | | | ▲ | | | | | | | | | | | | | | | | | |
| <i>Enterococcus durans</i> | | | | | | | ▲ | | | | | | | | | | | | | | | | | |
| <i>Enterococcus faecalis</i> | | | | | | | ▲ | | | | | | | | | | | | | | | | | |
| <i>Enterococcus faecium</i> | | | | | | | ▲ | | | | | | | | | | | | | | | | | |
| <i>Enterococcus gallinarum</i> | | | | | | | T | | | | | | | | | | | | | | | | | |
| <i>Enterococcus hirae</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Enterococcus saccharolyticus</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Erwinia</i> spp | | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Erysipelothrix rhusiopathiae</i> | | | | | | | | | | | ▲ | | | | | | | | | | | | | |
| <i>Escherichia coli</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Escherichia fergusonii</i> | ▲ | | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Escherichia hermannii</i> | ▲ | | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Escherichia vulneris</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Eubacterium limosum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Ewingella americana</i> | ▲ | | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Finegoldia magna</i> <i>Peptostreptococcus magnus</i> | | | | | | | | | | T | | | | | | | | | | | | | | |
| <i>Fusobacterium mortiferum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Fusobacterium necrogenes</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Fusobacterium necrophorum</i> | | | | | | | | | | T | | | | | | | | | | | | | | |
| <i>Fusobacterium necrophorum</i> ssp <i>funduliforme</i> ... | | | | | | | | | | T | | | | | | | | | | | | | | |
| <i>Fusobacterium necrophorum</i> ssp <i>necrophorum</i> ... | | | | | | | | | | T | | | | | | | | | | | | | | |
| <i>Fusobacterium necrophorum/nucleatum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Fusobacterium nucleatum</i> | | | | | | | | | | T | | | | | | | | | | | | | | |
| <i>Fusobacterium varium</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Gardnerella vaginalis</i> | | | | | | | ▲ | | | | ▲ | | | | | | | | | | | | | |
| <i>Gemella haemolyans</i> | | | | | | | ▲ | | | | | | | | | | | | | | | | | |
| <i>Gemella morbillorum</i> | | | | | | | ▲ | | | ▲ | | | | | | | | | | | | | | |
| <i>Geobacillus stearothermophilus</i> <i>Bacillus stearothermophilus</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Geobacillus thermoglucosidasius</i> | | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Geotrichum candidum</i> | | | | | | | T | T | | | | | | | | | | | | | | | | |
| <i>Geotrichum capitatum</i> | | | | | | | T | ▲ | | | | | | | | | | | | | | | | |
| <i>Geotrichum fermentans</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Geotrichum klebahnii</i> <i>Geotrichum penicillatum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Geotrichum</i> spp | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Globicatella sanguinis</i> ... | | | | | | | ▲ | | | | | | | | | | | | | | | | | |
| <i>Gordonia</i> spp <i>Gordona</i> spp | | | | | | | | | | | T | | | | | | | | | | | | | |
| <i>Granulicatella adiacens</i> <i>Abiotrophia adiacens</i> | | | | | | | ▲ | | | | | | | | | | | | | | | | | |
| <i>Grimontia hollisae</i> <i>Vibrio hollisae</i> | ▲ | | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | |
| <i>Haemophilus actinomycetemcomitans</i> <i>Actinobacillus actinomycetemcomitans</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Haemophilus aphrophilus</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Haemophilus aphrophilus/paraphrophilus</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Haemophilus influenzae</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Haemophilus influenzae</i> biotype I | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Haemophilus influenzae</i> biotype II | | | | | | | | | | | | | | | | | | | | | | | | |

changed taxonomy former taxonomy

new species

species described below ...

species present in database ▲

species identifiable with additional tests T

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|--|----------|----------|------------|-----------|--|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|--|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Haemophilus influenzae</i> biotype III | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus influenzae</i> biotype IV | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus influenzae</i> biotype V | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus influenzae</i> biotype VI | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus influenzae</i> biotype VII | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus influenzae</i> biotype VIII | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus paragallinarum</i> | | | | | | | | | | | | | | ▲ | | | | | | | | | | | |
| <i>Haemophilus parainfluenzae</i> | | | | | | | | | | | | | | ▲ | | | | | | | | | | | |
| <i>Haemophilus parainfluenzae</i> biotype I | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus parainfluenzae</i> biotype II | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus parainfluenzae</i> biotype III | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus parainfluenzae</i> biotype IV | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus parainfluenzae</i> biotype VI | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus parainfluenzae</i> biotype VII | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus parainfluenzae</i> biotype VIII | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Haemophilus paraphrophilus</i> | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Hafnia alvei</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | ▲ | | | | | ▲ | ▲ | ▲ | | | |
| <i>Helicobacter cinaedi</i> | | | | | | | | | | | | | | | ▲ | | | | | | | | | | |
| <i>Helicobacter fennelliae</i> | | | | | | | | | | | | | | | ▲ | | | | | | | | | | |
| <i>Helicobacter pylori</i> | | | | | | | | | | | | | | | ▲ | | | | | | | | | | |
| <i>Histophilus somni</i> "Haemophilus somnus" | | | | | | | | | | | | | | ▲ | | | | | | | | | | | |
| <i>Klebsiella oxytoca</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | ▲ | | | | | ▲ | ▲ | ▲ | | | |
| <i>Klebsiella pneumoniae</i> ssp <i>ozaenae</i> | ▲ | | ▲ | | | | | | | | | | | | ▲ | | | | | ▲ | ▲ | ▲ | | | |
| <i>Klebsiella pneumoniae</i> ssp <i>pneumoniae</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | ▲ | | | | | ▲ | ▲ | ▲ | | | |
| <i>Klebsiella pneumoniae</i> ssp <i>rhinoscleromatis</i> | ▲ | | ▲ | | | | | | | | | | | | ▲ | | | | | ▲ | ▲ | ▲ | | | |
| <i>Kloeckera apiculata</i> | | | | | | | | | T | | | | | | | | | | | | | | | | T |
| <i>Kloeckera apis</i> | | | | | | | | | T | | | | | | | | | | | | | | | | T |
| <i>Kloeckera apis/apiculata</i> | | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Kloeckera japonica</i> | | | | | | | | | T | | | | | | | | | | | | | | | | ▲ |
| <i>Kloeckera</i> spp | | | | | | | | | ▲ | | | | | | | | | | | | | | | | |
| <i>Kluyvera ascorbata</i> | T | | T | | | | | | | | | | | | ▲ | | | | | ▲ | ▲ | ▲ | | | |
| <i>Kluyvera cryocrescens</i> | T | | T | | | | | | | | | | | | ▲ | | | | | ▲ | ▲ | ▲ | | | |
| <i>Kluyvera</i> spp | ▲ | | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Kocuria kristinae</i> | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Kocuria rosea</i> | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Kocuria varians</i> | | | | | | | | | | | | | | T | | | | | | | | | | | |
| <i>Kocuria varians/rosea</i> | | | | | | | | | | | | | | ▲ | | | | | | | | | | | |
| <i>Kodamaea ohmeri</i> <i>Pichia ohmeri</i> | | | | | | | | | ▲ | | | | | | | | | | | | | | | | ▲ |
| <i>Kytococcus sedentarius</i> | | | | | | | | | | | | | T | | | | | | | | | | | | |
| <i>Lactobacillus acidophilus</i> | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Lactobacillus acidophilus/jensenii</i> | | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Lactobacillus brevis</i> | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Lactobacillus buchneri</i> | | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Lactobacillus collinoides</i> | | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Lactobacillus coprophilus</i> | | | | | | | | | | | | | | | | | | | | | | | | | T |
| <i>Lactobacillus crispatus</i> | | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Lactobacillus curvatus</i> | | | | | | | | | | | | | | | | | | | | | | | | | T |

changed taxonomy former taxonomy

new species

species described below ...

species present in database ▲

species identifiable with additional tests T

Lactobacillus curvatus ssp *curvatus* *Lactobacillus curvatus*

Lactobacillus delbrueckii ssp *bulgaricus*

Lactobacillus delbrueckii ssp *delbrueckii*

Lactobacillus delbrueckii ssp *lactis*

Lactobacillus fermentum *Lactobacillus cellobiosus*

Lactobacillus fructivorans

Lactobacillus helveticus

Lactobacillus jensenii

Lactobacillus lindneri

Lactobacillus paracasei ssp *paracasei*

Lactobacillus pentosus

Lactobacillus plantarum

Lactobacillus rhamnosus

Lactobacillus salivarius

Lactococcus garvieae

Lactococcus lactis ssp *cremoris*

Lactococcus lactis ssp *hordniae*

Lactococcus lactis ssp *lactis*

Lactococcus raffinolactis

Leclercia adecarboxylata

Leifsonia aquatica *Corynebacterium aquaticum*

Leptotrichia buccalis

Leuconostoc citreum

Leuconostoc lactis

Leuconostoc mesenteroides ssp *cremoris*

Leuconostoc mesenteroides ssp *dextranicum*

Leuconostoc mesenteroides ssp *mesenteroides*

Leuconostoc mesenteroides ssp *mesenteroides/dextranicum*

Leuconostoc spp

Listeria grayi

Listeria innocua

Listeria ivanovii

Listeria monocytogenes

Listeria monocytogenes/innocua

Listeria seeligeri

Listeria spp

Listeria welshimeri

Mannheimia haemolytica *Pasteurella haemolytica*

Mannheimia haemolytica/Pasteurella trehalosi *Pasteurella haemolytica*

Methylobacterium mesophilicum

Microbacterium spp *Aureobacterium* spp

Microbacterium spp/*Leifsonia aquatica*

Micrococcus luteus

Micrococcus lylae

Micrococcus spp

Micromonas micros *Peptostreptococcus micros*

Mobiluncus curtisii

API 20 E

API 10 S

Rapid 20 E

API 20 NE

API Staph

API 20 Strep

API Candida

API 20 C AUX

API 20 A

API Coryne

API Campy

API Listeria

API NH

API 50 CHE

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ID 32 E

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|---|----------|----------|------------|-----------|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Mobiluncus mulieris</i> | | | | | | | | | | | | | | | | | | | | | | | T |
| <i>Mobiluncus</i> spp | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Moellerella wisconsensis</i> | ▲ | | ▲ | | | | | | | | | | | | | | | ▲ | ▲ | ▲ | | | |
| <i>Moraxella (Branhamella) catarrhalis</i> <small>Branhamella catarrhalis</small> | | | | | | | | | | | | | ▲ | | | | | ▲ | ▲ | ▲ | | | |
| <i>Moraxella lacunata</i> | | | | ▲ | | | | | | | | | | | | | | T | | ▲ | | | |
| <i>Moraxella nonliquefaciens</i> | | | | T | | | | | | | | | | | | | | | | T | | | |
| <i>Moraxella osloensis</i> | | | | T | | | | | | | | | | | | | | T | | ▲ | | | |
| <i>Moraxella</i> spp | T | | | ▲ | | | | | | | | | | | | | | T | | | | | |
| <i>Morganella morganii</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | T | ▲ | ▲ | | | |
| <i>Morganella morganii</i> ssp <i>morganii</i> | | | | | | | | | | | | | | | | ▲ | | ▲ | | | | | |
| <i>Morganella morganii</i> ssp <i>sibonii</i> | | | | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Myroides</i> spp | T | | | | | | | | | | | | | | | | | T | | | | | |
| <i>Myroides</i> spp/ <i>Chryseobacterium indologenes</i> | ▲ | | | ▲ | | | | | | | | | | | | | | | ▲ | | | | |
| <i>Neisseria cinerea</i> | | | | | | | | | | | | | | ▲ | | | | | | | | | |
| <i>Neisseria gonorrhoeae</i> | | | | | | | | | | | | | | ▲ | | | | | | | | | |
| <i>Neisseria lactamica</i> | | | | | | | | | | | | | | ▲ | | | | | | | | | |
| <i>Neisseria meningitidis</i> | | | | | | | | | | | | | | ▲ | | | | | | | | | |
| <i>Neisseria mucosa</i> | | | | | | | | | | | | | | T | | | | | | | | | |
| <i>Neisseria polysaccharea</i> | | | | | | | | | | | | | | ▲ | | | | | | | | | |
| <i>Neisseria sicca</i> | | | | | | | | | | | | | | T | | | | | | | | | |
| <i>Neisseria</i> spp | | | | | | | | | | | | | | ▲ | | | | | | | | | |
| <i>Neisseria subflava</i> | | | | | | | | | | | | | | T | | | | | | | | | |
| <i>Nocardia</i> spp | | | | | | | | | | T | | | | | | | | | | | | | |
| <i>Non-fermenter</i> spp | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Ochrobactrum anthropi</i> | ▲ | | | | | | | | | | | | | | | | | ▲ | | ▲ | | | |
| <i>Oerskovia turbata</i> <small>Cellulomonas turbata</small> | | | | ▲ | | | | | | T | | | | | | | | | | | | | |
| <i>Oligella</i> spp | | | | | | | | | | | | | | | | | | | | ▲ | | | |
| <i>Oligella ureolytica</i> | | | | ▲ | | | | | | | | | | | | | | | | T | | | |
| <i>Oligella urethralis</i> | | | | T | | | | | | | | | | | | | | | | T | | | |
| <i>Paenibacillus alvei</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Paenibacillus amylolyticus</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Paenibacillus glucanolyticus</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Paenibacillus lautus</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Paenibacillus macerans</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Paenibacillus pabuli</i> | | | | | | | | | | | | | | | | | | | | | | | T |
| <i>Paenibacillus polymyxa</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Paenibacillus thiaminolyticus</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Paenibacillus validus</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Pantoea agglomerans</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Pantoea dispersa</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Pantoea</i> spp | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Pasteurella aerogenes</i> | ▲ | | | ▲ | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Pasteurella multocida</i> | ▲ | | | ▲ | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Pasteurella pneumotropica</i> | T | | | ▲ | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Pasteurella pneumotropica</i> / <i>Mannheimia haemolytica</i> | ▲ | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Pasteurella</i> spp | | | | ▲ | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Pasteurella trehalosi</i> | | | | T | | | | | | | | | | | | | | | | | | | T |

changed taxonomy former taxonomy

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|--|----------|----------|------------|-----------|---|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Pediococcus acidilactici</i> | | | | | | | | | | | | | | | | ▲ | | | | | | | | |
| <i>Pediococcus damnosus</i> | | | | | | | | | | | | | | | | ▲ | | | | | | | | |
| <i>Pediococcus pentosaceus</i> | | | | | | | | | | | | | | | | ▲ | | | | | | | | |
| <i>Pediococcus</i> spp | | | | | | | | | | | | | | | | ▲ | | | | | | | | |
| <i>Peptococcus niger</i> | | | | | | | | | | T | | | | | | | | | | | | | | |
| <i>Peptoniphilus asaccharolyticus</i> <i>Peptostreptococcus asaccharolyticus</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Peptoniphilus indolicus</i> <i>Peptostreptococcus indolicus</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Peptostreptococcus anaerobius</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Peptostreptococcus</i> group | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Photobacterium damselae</i> <i>Photobacterium damselae</i> | ▲ | | ▲ | ▲ | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Photobacterium damselae</i> ssp <i>damselae</i> ... | | | | | | | | | | | | | | | | | | | T | | | | | |
| <i>Photobacterium damselae</i> ssp <i>piscicida</i> ... | | | | | | | | | | | | | | | | | | | T | | | | | |
| <i>Pichia angusta</i> <i>Hansenula polymorpha</i> | | | | | | | | | ▲ | | | | | | | | | | | | | | | |
| <i>Pichia farinosa</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Plesiomonas shigelloides</i> | ▲ | ▲ | ▲ | ▲ | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Porphyromonas asaccharolytica</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Porphyromonas endodontalis</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Porphyromonas gingivalis</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Prevotella bivia</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Prevotella buccae</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Prevotella buccalis</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Prevotella denticola</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Prevotella disiens</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Prevotella intermedia</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Prevotella intermedia/disiens</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Prevotella loescheii</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Prevotella melaninogenica</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Prevotella melaninogenica/oralis</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Prevotella oralis</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Propionibacterium acnes</i> | | | | | | | | | | ▲ | ▲ | | | | | | | | | | | | | ▲ |
| <i>Propionibacterium avidum</i> | | | | | | | | | | T | ▲ | | | | | | | | | | | | | ▲ |
| <i>Propionibacterium granulosum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Propionibacterium propionicum</i> <i>Propionibacterium propionicum</i> | | | | | | | | | | T | | | | | | | | | | | | | | ▲ |
| <i>Propionibacterium propionicum/avidum</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Proteus mirabilis</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Proteus penneri</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Proteus vulgaris</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Proteus vulgaris</i> group | ▲ | ▲ | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Prototheca wickerhamii</i> | | | | | | | | | ▲ | | | | | | | | | | | | | | | |
| <i>Providencia alcalifaciens</i> | T | | | ▲ | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Providencia alcalifaciens/rustigianii</i> | ▲ | | | | | | | | | | | | | | | | | | ▲ | | | | | |
| <i>Providencia rettgeri</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Providencia rustigianii</i> | T | | | | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Providencia stuartii</i> | ▲ | | | ▲ | | | | | | | | | | | | ▲ | | | ▲ | | | | | |
| <i>Providencia stuartii/alcalifaciens</i> | | | ▲ | | | | | | | | | | | | | | | | ▲ | | | | | |
| <i>Pseudomonas aeruginosa</i> | ▲ | | | | ▲ | | | | | | | | | | | | | | ▲ | | | | | |
| <i>Pseudomonas aeruginosa/fluorescens/putida</i> | | | ▲ | | | | | | | | | | | | | | | | ▲ | | | | | |

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|---|----------|----------|------------|-----------|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Pseudomonas alcaligenes</i> | | | | T | | | | | | | | | | | | | | | | | | | |
| <i>Pseudomonas fluorescens</i> | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pseudomonas fluorescens/putida</i> | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pseudomonas luteola</i> <i>Chryseomonas luteola</i> | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pseudomonas mendocina</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pseudomonas oryzaehabitans</i> <i>Flavimonas oryzaehabitans</i> | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pseudomonas pseudoalcaligenes</i> | | | | T | | | | | | | | | | | | | | | | | | | |
| <i>Pseudomonas putida</i> | T | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pseudomonas</i> spp | | ▲ | | | | | | | | | | | | | | | | T | | | | | |
| <i>Pseudomonas stutzeri</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pseudomonas/Comamonas</i> spp | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Psychrobacter phenylpyruvicus</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Rahnella aquatilis</i> | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Ralstonia pickettii</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Raoultella ornithinolytica</i> <i>Klebsiella ornithinolytica</i> | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Raoultella planticola</i> <i>Klebsiella planticola</i> | T | | T | | | | | | | | | | | | | | | | | | | | |
| <i>Raoultella</i> spp | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Raoultella terrigena</i> <i>Klebsiella terrigena</i> | ▲ | | T | | | | | | | | | | | | | | | | | | | | |
| <i>Rhizobium radiobacter</i> <i>Agrobacterium radiobacter</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Rhodococcus equi</i> | | | | | | | | | | | T | | | | | | | | | | | | |
| <i>Rhodococcus</i> spp | | | | | | | | | | | ▲ | | | | | | | | | | | | |
| <i>Rhodotorula glutinis</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Rhodotorula minuta</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Rhodotorula mucilaginosa</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Rothia dentocariosa</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Rothia mucilaginosa</i> <i>Stomatococcus mucilaginosus</i> | | | | | | T | | | | | | | | | | | | | | | | | ▲ |
| <i>Saccharomyces cerevisiae</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Saccharomyces kluyverii</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella choleraesuis</i> ssp <i>arizonae</i> <i>Salmonella arizonae</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella choleraesuis</i> ssp <i>choleraesuis</i> <i>Salmonella choleraesuis</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella enteritidis</i> | T | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella</i> ser.Gallinarum <i>Salmonella gallinarum</i> | ▲ | ▲ | T | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella</i> ser.Paratyphi A <i>Salmonella paratyphi A</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella</i> ser.Paratyphi B <i>Salmonella paratyphi B</i> | T | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella</i> ser.Pullorum <i>Salmonella pullorum</i> | ▲ | ▲ | T | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella</i> spp | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella typhi</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Salmonella typhimurium</i> | T | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Serratia ficaria</i> | ▲ | | | ▲ | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Serratia fonticola</i> | ▲ | | | ▲ | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Serratia grimesii</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Serratia liquefaciens</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Serratia liquefaciens/plymouthica</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Serratia marcescens</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Serratia odorifera</i> | ▲ | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Serratia plymuthica</i> | ▲ | | | ▲ | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Serratia proteamaculans</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |

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|---|----------|----------|------------|-----------|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Serratia rubidaea</i> | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | | | | | |
| <i>Shewanella putrefaciens</i> group <i>Shewanella putrefaciens</i> | ▲ | ▲ | | ▲ | | | | | | | | | | | | | ▲ | ▲ | ▲ | | | | |
| <i>Shigella boydii</i> | T | | | | | | | | | | | | | ▲ | | | T | | | | | | |
| <i>Shigella dysenteriae</i> | T | | | | | | | | | | | | | ▲ | | | T | | | | | | |
| <i>Shigella flexneri</i> | T | | | | | | | | | | | | | ▲ | | | T | | | | | | |
| <i>Shigella sonnei</i> | ▲ | | | ▲ | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | ▲ | | | |
| <i>Shigella</i> spp | ▲ | ▲ | ▲ | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | ▲ | | | |
| <i>Sphingobacterium multivorum</i> | | | ▲ | | | | | | | | | | | | | | T | | ▲ | | | | |
| <i>Sphingobacterium spiritivorum</i> | | | | ▲ | | | | | | | | | | | | | T | | ▲ | | | | |
| <i>Sphingomonas paucimobilis</i> | | | | ▲ | | | | | | | | | | | | | ▲ | | ▲ | | | | |
| <i>Sporobolomyces salmonicolor</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ |
| <i>Staphylococcus arlettae</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus aureus</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus auricularis</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus capitis</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus caprae</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus carnosus</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus chromogenes</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus cohnii</i> ssp <i>cohnii</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus cohnii</i> ssp <i>urealyticus</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus epidermidis</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus equorum</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus gallinarum</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus haemolyticus</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus hominis</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus hyicus</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus intermedius</i> | | | | | T | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus kloosii</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus lentus</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus lugdunensis</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus saccharolyticus</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | |
| <i>Staphylococcus saprophyticus</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus schleiferi</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus sciuri</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus simulans</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus warneri</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Staphylococcus xylosus</i> | | | | | ▲ | | | | | | | | | | | | | | | | | | |
| <i>Stenotrophomonas maltophilia</i> | ▲ | ▲ | T | ▲ | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Stephanoascus ciferrii</i> <i>Candida ciferrii</i> | | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ |
| <i>Streptococcus acidominimus</i> | | | | | | T | | | | | | | | | | | | | | | | T | |
| <i>Streptococcus agalactiae</i> | | | | | | ▲ | | | | | | | | | | | | | | | | | ▲ |
| <i>Streptococcus alactolyticus</i> | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Streptococcus anginosus</i> | | | | | | ▲ | | | | | | | | | | | | | | | | | ▲ |
| <i>Streptococcus bovis</i> | | | | | | T | | | | | | | | | | | | | | | | T | |
| <i>Streptococcus bovis</i> I | | | | | | ▲ | | | | | | | | | | | | | | | | | ▲ |
| <i>Streptococcus bovis</i> II | | | | | | ▲ | | | | | | | | | | | | | | | | | ▲ |
| <i>Streptococcus canis</i> | | | | | | ▲ | | | | | | | | | | | | | | | | | ▲ |

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|--|----------|----------|------------|-----------|--|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Streptococcus constellatus</i> | | | | | | | ▲ | | | ▲ | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus constellatus ssp constellatus</i> *** | | | | | | | T | | | | | | | | | | | | | | | T | | |
| <i>Streptococcus constellatus ssp pharyngis</i> *** | | | | | | | T | | | | | | | | | | | | | | | T | | |
| <i>Streptococcus downei</i> | | | | | | | | | | | | | | | | | | | | | | T | | |
| <i>Streptococcus downei/sobrinus</i> | | | | | | | | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus dysgalactiae ssp dysgalactiae</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus dysgalactiae ssp equisimilis</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus equi ssp equi</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus equi ssp zooepidemicus</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus equinus</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus gallolyticus ssp gallolyticus</i> *** | | | | | | | T | | | | | | | | | | | | | | | T | | |
| <i>Streptococcus gallolyticus ssp pasteurianus</i> *** | | | | | | | T | | | | | | | | | | | | | | | T | | |
| <i>Streptococcus gordonii</i> | | | | | | | | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus group L</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus infantarius ssp coli</i> *** | | | | | | | T | | | | | | | | | | | | | | | T | | |
| <i>Streptococcus infantarius ssp infantarius</i> *** | | | | | | | T | | | | | | | | | | | | | | | T | | |
| <i>Streptococcus intermedius</i> | | | | | | | ▲ | | | ▲ | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus mitis</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus mutans</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus oralis</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus parasanguinis</i> <i>Streptococcus parasanguis</i> | | | | | | | | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus pluranimalium</i> *** | | | | | | | T | | | | | | | | | | | | | | | T | | |
| <i>Streptococcus pneumoniae</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus porcinus</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus pyogenes</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus salivarius</i> <i>Streptococcus salivarius ssp salivarius</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus sanguinis</i> <i>Streptococcus sanguis</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus sobrinus</i> | | | | | | | | | | | | | | | | | | | | | | T | | |
| <i>Streptococcus suis I</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus suis II</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus thermophilus</i> <i>Streptococcus salivarius ssp thermophilus</i> | | | | | | | T | | | | | | | | | | ▲ | | | | | ▲ | | |
| <i>Streptococcus uberis</i> | | | | | | | ▲ | | | | | | | | | | | | | | | ▲ | | |
| <i>Streptococcus vestibularis</i> | | | | | | | | | | | | | | | | | | | | | | ▲ | | |
| <i>Tatumella ptyseos</i> | | | | | | | | | | | | | | | | | | | ▲ | | | | | |
| <i>Tetragenococcus halophilus</i> | | | | | | | | | | | | | | | | | ▲ | | | | | | | |
| <i>Trichosporon asahii</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | ▲ |
| <i>Trichosporon asteroides</i> | | | | | | | | | | | | | | | | | | | | | | | T | |
| <i>Trichosporon inkin</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ | |
| <i>Trichosporon mucoides</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | ▲ | |
| <i>Trichosporon ovoides</i> | | | | | | | | | | | | | | | | | | | | | | | T | |
| <i>Trichosporon spp</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Turicella otitidis</i> | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Veillonella parvula</i> | | | | | | | | | | ▲ | | | | | | | | | | | | | | |
| <i>Veillonella spp</i> | | | | | | | | | | | | | | | | | | | | | | | | ▲ |
| <i>Vibrio alginolyticus</i> | ▲ | | ▲ | ▲ | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |
| <i>Vibrio alginolyticus/parahaemolyticus</i> | | | ▲ | | | | | | | | | | | | | | | | ▲ | ▲ | ▲ | | | |
| <i>Vibrio cholerae</i> | ▲ | | ▲ | ▲ | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | |

changed taxonomy former taxonomy

new species

species described below ***

species present in database ▲

species identifiable with additional tests T

| | API 20 E | API 10 S | Rapid 20 E | API 20 NE | API Staph | API 20 Strep | API Candida | API 20 C AUX | API 20 A | API Coryne | API Campy | API Listeria | API NH | API 50 CHE | API 50 CHL | API 50 CHB | ID 32 E | Rapid ID 32 E | ID 32 GN | ID 32 Staph | Rapid ID 32 Strep | ID 32 C | Rapid ID 32 A |
|--|----------|----------|------------|-----------|-----------|--------------|-------------|--------------|----------|------------|-----------|--------------|--------|------------|------------|------------|---------|---------------|----------|-------------|-------------------|---------|---------------|
| <i>Vibrio fluvialis</i> | ▲ | | ▲ | T | | | | | | | | | | ▲ | | | ▲ | ▲ | | | | | |
| <i>Vibrio metschnikovii</i> | | | | ▲ | | | | | | | | | | ▲ | | | ▲ | ▲ | | | | | |
| <i>Vibrio mimicus</i> | ▲ | | | T | | | | | | | | | | ▲ | | | ▲ | ▲ | | | | | |
| <i>Vibrio parahaemolyticus</i> | ▲ | | ▲ | ▲ | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | | |
| <i>Vibrio vulnificus</i> | ▲ | | ▲ | ▲ | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | | |
| <i>Vibrio vulnificus/cholerae</i> | | ▲ | | | | | | | | | | | | | | | | | | | | | |
| <i>Virgibacillus pantothenticus</i> <i>Bacillus pantothenticus</i> | | | | | | | | | | | | | | | | ▲ | | | | | | | |
| <i>Wautersia paucula</i> CDC gr.IV C-2 - <i>Ralstonia paucula</i> | | | | ▲ | | | | | | | | | | | | | | | ▲ | | | | |
| <i>Weeksella virosa</i> | | | | T | | | | | | | | | | | | | T | | | | | | |
| <i>Weeksella virosa/Bergeyella zoohelcum</i> | | | | | | | | | | | | | | | | | ▲ | | | | | | |
| <i>Weeksella virosa/Empedobacter brevis</i> | | | | ▲ | | | | | | | | | | | | | | | | | | | |
| <i>Weissella confusa</i> " <i>Lactobacillus coprophilus</i> " | | | | | | | | | | | | | | | | ▲ | | | | | | | |
| <i>Weissella viridescens</i> | | | | | | | | | | | | | | | | ▲ | | | | | | | |
| <i>Williopsis saturnus</i> <i>Hansenula saturnus</i> | | | | | | | | | | | | | | | | ▲ | | | | | | | ▲ |
| <i>Xanthomonas campestris</i> | | | | | | | | | | | | | | | | | | | ▲ | | | | |
| <i>Yersinia aldovae</i> | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Yersinia enterocolitica</i> | ▲ | ▲ | ▲ | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | | |
| <i>Yersinia frederiksenii</i> | T | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | | |
| <i>Yersinia frederiksenii/intermedia</i> | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| <i>Yersinia intermedia</i> | T | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | | |
| <i>Yersinia kristensenii</i> | ▲ | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | | |
| <i>Yersinia pestis</i> | ▲ | | ▲ | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | | |
| <i>Yersinia pseudotuberculosis</i> | ▲ | ▲ | ▲ | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | | |
| <i>Yersinia ruckeri</i> | T | | | | | | | | | | | | | ▲ | | | ▲ | ▲ | ▲ | | | | |
| <i>Zygosaccharomyces</i> spp | | | | | | | | | | | | | | | | | | | | | | | ▲ |

changed taxonomy former taxonomy

new species

species described below ...

species present in database ▲

species identifiable with additional tests T



DESCRIPTION OF SPECIES RECENTLY INTEGRATED INTO THE DATABASES

STREPTOCOCCUS GROUP

- *Aerococcus urinae* (ref. 42).
New species of the *Aerococcus* genus isolated from patients with **urinary tract infections**.
- *Globicatella sanguinis* (ref. 44).
New gram-positive catalase-negative bacterium isolated from human sources.
The strains were isolated in cases of **bacteremia, urinary tract infections** and **meningitis**.
- *Streptococcus constellatus ssp constellatus* (ref. 45).
The strains of this species are often beta-hemolytic and belong to Lancefield group F or are non-hemolytic and not serologically groupable.
Certain strains react to Lancefield group A, C and G antisera. They are found in the oral cavity and upper respiratory tract. The strains were isolated in cases of **purulent infections** including **appendicitis** in humans.
- *Streptococcus constellatus ssp pharyngis* (ref. 45).
The strains of this species are beta-hemolytic and belong to Lancefield group C.
The strains were isolated from human throat samples (**pharyngitis**) and clinical samples (e.g. abdominal mass).
- *Streptococcus gallolyticus ssp gallolyticus* (ref. 41).
This sub-species includes strains identified as *S. bovis* biotype I. Most of the strains were isolated from the feces of marsupials (koalas, kangaroos, brushtail possums, opossums) and other mammals including cows, horses, pigs, dogs and guinea pigs.



Certain strains were isolated from sheep rumens and it has been shown that some are responsible for **bovine mastitis**. Most of the human strains were isolated from blood or stool samples; they were often responsible for **endocarditis** associated with **colon cancer**.

- *Streptococcus gallolyticus ssp pasteurianus* (ref. 41).

This new sub-species comprises strains formerly identified as *S. bovis* II.2.

The strains of this species were isolated in miscellaneous human infections, primarily **bacteremia** and **endocarditis**.

Certain strains were isolated in cases of urinary tract infections or purulent infections.

- *Streptococcus infantarius* (ref. 39).
Formerly identified as *S. bovis* biotype II.1. (infantarius relating to infants, the source of the reference strain). Lancefield group D antigen is present in 40% of strains.
- *Streptococcus infantarius ssp infantarius*.
The reference strain was isolated from the stools of a human infant.
Others were isolated from **clinical samples** (blood samples, including cases of **endocarditis**) or **food products** (dairy products and frozen peas).
- *Streptococcus infantarius ssp coli*.
The strains of this species were isolated from **human samples**, including infant stools, urine samples and blood samples including some from cases of **endocarditis**.
- *Streptococcus pluranimalium* (ref. 43).
(*Pluranimalium* relating to numerous animals).
The strains of this species were found from sub-clinical **mastitis**, the genital tracts and amygdala of farm animals, the amygdala of goats and cats and lastly from the crops and respiratory tract of canaries.
The reference strain of *S. pluranimalium* was isolated from the mastitic milk of a dairy cow.



BACILLUS AND RELATED GENERA

Gram-positive rods which form an endospore are generally assigned to the genus *Bacillus*.

In recent years, the genus has been divided and over a dozen new genera of aerobic endospore-forming bacteria have been proposed:

Alicyclobacillus
Amnophilus
Amphibacillus
Aneurinibacillus
Brevibacillus
Filobacillus
Geobacillus
Gracibacillus
Halobacillus
Jeotgalibacillus
Marinibacillus
Paenibacillus

Salibacillus
Sporosarcina
Sulfobacillus
Thermobacillus
Ureidobacillus
Virgibacillus

Most of the species in these genera are saprophytic and many are widespread in natural settings.

Although certain species are opportunistic or obligate pathogens in animals (humans, mammals, insects), the primary habitats of these microorganisms are soils of all types, fresh and salt water and sediments.

The spores survive easily in habitats other than their original environment, such as food products and industrial sites.

As they are ubiquitous in the environment and resistant, these microorganisms pose real contamination problems:

- They can colonize entire facilities and become true competitors in fermentation processes, potentially leading to costly stoppages while contaminated production facilities are cleaned. Moreover, the spores adhere strongly to surfaces, making cleaning operations particularly difficult.
- The spores withstand certain manufacturing processes and can contaminate or deteriorate end products consumed by at-risk populations (children, elderly people, immunodepressed subjects). Dried foods such as spices, powdered milk and flour products are often highly contaminated by spores.

Conversely, some of these microorganisms are used in industrial manufacturing processes.

For example, strains of *Bacillus*, *Paenibacillus* and *Brevibacillus* are used in a variety of industries, from foodstuffs to detergents and leather treatment processes.

Certain antibiotic molecules (polymyxin B, bacitracin, etc.) are produced by specific *Bacillus* strains.

In agriculture, the insecticidal or antifungal activity of certain species is harnessed to protect crops.



New species added:

Bacillus

Bacillus species are mainly environmental microorganisms.

In their primary habitat, soil, they have roles in the carbon and nitrogen cycles.

The resistance of *Bacillus* spores is a major issue in both medicine and industry.

Furthermore, the adherence of the spores further complicates matters in industrial processes (food processing,

medicinal products, disposable sterile equipment). *Bacillus cereus* spores, for example, adhere well to stainless steel surfaces and cause serious problems in food processing plants.

Pathogenic species:

Bacillus anthracis (anthrax), *Bacillus cereus* (food poisoning), *Paenibacillus larvae* (pathogenic for honey bees) have known pathogenic properties.

Other species are isolated less frequently, in infections caused by accidental or surgical traumas, food poisoning or, more seriously, in cases of endocarditis and septicaemia (ref. 65).

The following new species have been added to the API 50CHB database:

- *Bacillus smithii*
- *Bacillus fusiformis* (in the “non-reactive *Bacillus*” group)
- *Bacillus badius* (in the “non-reactive *Bacillus*” group)

Aneurinibacillus* and *Brevibacillus

These two genera stem from the reclassification of *Bacillus brevis* and *Bacillus aneurinilyticus*.

Five species of *Aneurinibacillus* and 13 species of *Brevibacillus* have been described to date.

The following new species have been added to the API 50CHB database:

- *Aneurinibacillus aneurinilyticus*
- *Brevibacillus agri*
- *Brevibacillus choshinensis*
(in the “non-reactive *Brevibacillus*” group)
- *Brevibacillus centrosporus*
(in the “non-reactive *Brevibacillus*” group)
- *Brevibacillus borstelensis*
(in the “non-reactive *Brevibacillus*” group)



Geobacillus

This new genus (ref. 13) was formerly classified in *Bacillus* group 5. It comprises thermophilic species isolated from various sources such as geothermal water, tainted foodstuffs and organic compost. It apparently plays a role in the equilibrium of certain thermal biotopes and temperate soils.

The following new species has been added to the API 50CHB database:

- *Geobacillus thermoglucosidasius*

Paenibacillus

This genus comprises species formerly classified in *Bacillus* group 3 (ref. 50-53).

Paenibacillus species are soil bacteria, though certain species are pathogenic for insects and can occasionally be responsible for infections in mammals.

The most important species in veterinary bacteriology is *Paenibacillus larvae* ssp *larvae* which causes American foulbrood in capped honey bee larvae.

The following new species have been added to the API 50CHB database:

- *Paenibacillus amylolyticus*
- *Paenibacillus glucanolyticus*
- *Paenibacillus lautus*
- *Paenibacillus thiaminolyticus*
- *Paenibacillus validus*
- *Paenibacillus pabuli* (associated with *Paenibacillus polymyxa*)

Virgibacillus

The genus *Virgibacillus* was proposed (ref. 62) to accommodate *Bacillus pantothenicus* and members of this genus show salt tolerance, or their growth is stimulated by salt.

Bacillus pantothenicus was initially isolated in various soil samples from the south of England and was subsequently detected in food products, water and bile samples.

The following new species has been added to the API 50CHB database:

- *Virgibacillus pantothenicus*



OTHER SPECIES

- *Actinobacillus pleuropneumoniae* (ref. 55).

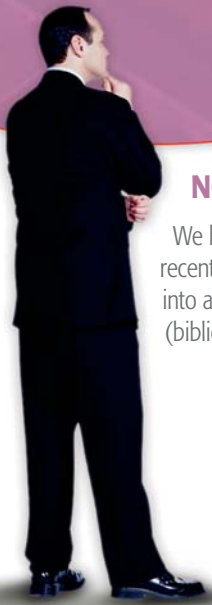
Contains two provisional biotypes:
Biotype 1 comprises factor V-dependent strains previously classified as *Haemophilus pleuropneumoniae*.
Biotype 2 comprises factor V-independent strains represented by the *Pasteurella haemolytica* strains described by Bertschinger.

This organism causes **porcine necrotic pleuropneumonia**.

- *Fusobacterium necrophorum* ssp *necrophorum* (ref. 46).
Fusobacterium necrophorum ssp *funduliforme*:
This sub-species was previously known as biovar A and B. *Fusobacterium necrophorum* ssp *necrophorum* was used for animal strains and *Fusobacterium necrophorum* ssp *funduliforme* for human strains: a hemagglutination

test and Lipase activity can be used to distinguish between them. *Fusobacterium necrophorum* ssp *necrophorum* strains were isolated primarily from **pathological animal lesions** and *Fusobacterium necrophorum* ssp *funduliforme* strains from **animal digestive tracts**.

- *Haemophilus paragallinarum* (ref. 56).
Formerly *Haemophilus gallinarum*.
- *Photobacterium damsela* ssp *piscicida* (ref. 25).
Piscida, meaning fish-killer, from *piscis* (fish) and *cida* from *caedo* (to cut or kill).
The strains were isolated from **diseased fish**.
Formerly known as *Pasteurella piscicida*.
- *Photobacterium damsela* ssp *damsela* (ref. 27).
Formerly known as *Photobacterium damsela*.
The strains were isolated from **diseased fish**.



NOTE

We have been unable to take the most recent update of the *Salmonella* nomenclature into account in our knowledge base (bibliographic references 63 and 64).

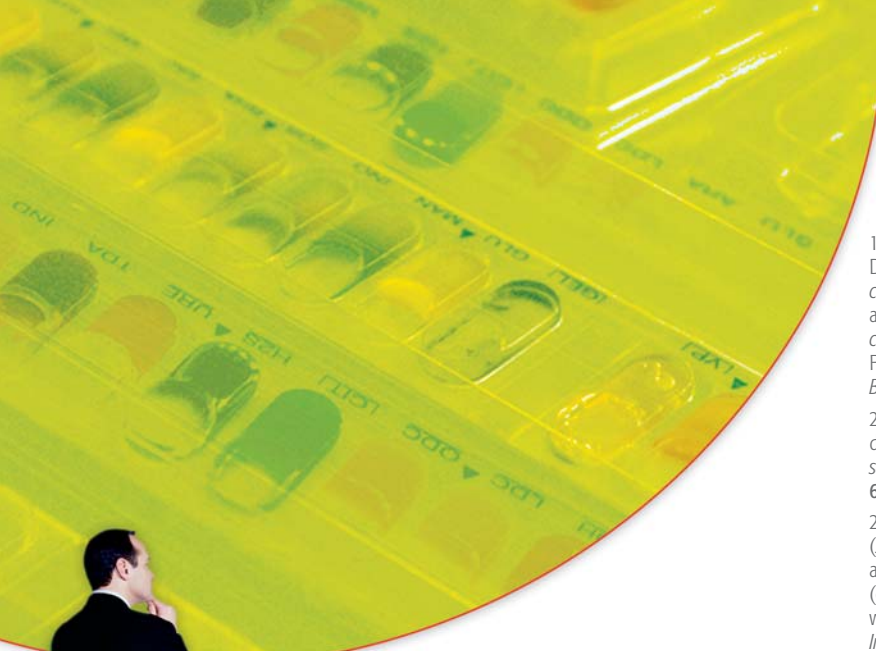
For your information, the current nomenclature is as follows:

- *Salmonella choleraesuis*
Salmonella enterica
- *Salmonella choleraesuis* ssp *salamae*
Salmonella enterica ssp *salamae*
- *Salmonella choleraesuis* ssp *indica*
Salmonella enterica ssp *indica*
- *Salmonella choleraesuis* ssp *houtenae*
Salmonella enterica ssp *houtenae*
- *Salmonella choleraesuis* ssp *diarizonae*
Salmonella enterica ssp *diarizonae*
- *Salmonella choleraesuis* ssp *choleraesuis*
Salmonella enterica ssp *enterica*
- *Salmonella choleraesuis* ssp *arizonae*
Salmonella enterica ssp *arizonae*
- *Salmonella typhimurium*
Salmonella ser.*Typhimurium*
- *Salmonella typhi*
Salmonella ser.*Typhi*
- *Salmonella enteritidis*
Salmonella ser.*Enteritidis*

• Former nomenclature
New nomenclature

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