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Review

Food fermentations: Microorganisms with technological beneficial use

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ABSTRACT

Microbial food cultures have directly or indirectly come under various regulatory frameworks in the course of the last decades. Several of those regulatory frameworks put emphasis on “the history of use”, “traditional food”, or “general recognition of safety”. Authoritative lists of microorganisms with a documented use in food have therefore come into high demand. One such list was published in 2002 as a result of a joint project between the International Dairy Federation (IDF) and the European Food and Feed Cultures Association (EFFCA). The “2002 IDF inventory” has become a de facto reference for food cultures in practical use. However, as the focus mainly was on commercially available dairy cultures, there was an unmet need for a list with a wider scope. We present an updated inventory of microorganisms used in food fermentations covering a wide range of food matrices (dairy, meat, fish, vegetables, legumes, cereals, beverages, and vinegar). We have also reviewed and updated the taxonomy of the microorganisms used in food fermentations in order to bring the taxonomy in agreement with the current standing in nomenclature.
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1. Introduction

Preservation of food including the use of fermentation of otherwise perishable raw materials has been used by man since the Neolithic period (around 10 000 years BC) (Prajapati and Nair, 2003). The scientific rationale behind fermentation started with the identification of microorganisms in 1665 by Van Leeuwenhoek and Hooke (Gest, 2004). Pasteur revoked the "spontaneous generation theory" around 1859 by elegantly designed experimentation (Wyman, 1862; Farley and Geison, 1974). The role of a sole bacterium, "*Bacterium*" *lactis* (*Lactococcus lactis*), in fermented milk was shown around 1877 by Sir John Lister (Santer, 2010). Fermentation, from the Latin word *fervere*, was defined by Louis Pasteur as "La vie sans l'air" (life without air). From a biochemical point of view, fermentation is a metabolic process of deriving energy from organic compounds without the involvement of an exogenous oxidizing agent. Fermentation plays different roles in food processing. Major roles considered are:

(1) Preservation of food through formation of inhibitory metabolites such as organic acid (lactic acid, acetic acid, formic acid, propionic acid), ethanol, bacteriocins, etc., often in combination with decrease of water activity (by drying or use of salt) (Ross et al., 2002; Gaggia et al., 2011).
(2) Improving food safety through inhibition of pathogens (Adams and Mitchell, 2002; Adams and Nicolaides, 2008) or removal of toxic compounds (Hammes and Tichaczek, 1994).
(3) Improving the nutritional value (van Boekel et al., 2010; Poutanen et al., 2009).
(4) Organoleptic quality of the food (Marilley and Casey, 2004; Smit et al., 2005; Lacroix et al., 2010; Sicard and Legras, 2011).

An authoritative list of microorganisms with a documented use in food was established as a result of a joint project between the International Dairy Federation (IDF) and the European Food and Feed Cultures Association (EFFCA). This list was published in 2002 by Mogensen et al. (2002a, 2002b). With the current review, we have undertaken the task to establish a revised and updated inventory of microorganisms with a history of use in fermented foods. We have chosen a pragmatic approach for updating the inventory by creating a "gross list" consisting of the 2002 inventory supplemented with additions suggested by the National Committees of IDF and members of EFFCA, as well as additions found by searching the scientific literature for documentation of food fermentations with emphasis on microbial associations and food matrices not initially covered. From this greatly expanded list we then critically reviewed the literature for each species in order to maintain only microbial species making desirable contributions to the food fermentation. This final step is not without ambiguity as taste and flavor preferences can be quite different, and what some would consider spoilage can be regarded as desirable by others. We intend to be conservative, and the current list is therefore less than exhaustive and it cannot be considered definitive. An updating process following the scientific rationale detailed in the present article will be established and hosted by IDF. The criteria chosen for including species on the list are:

- Inclusion
  - o Microbial species with a documented presence in fermented foods
- Exclusion
  - o Lack of documentation for any desirable function in the fermentation process
  - o The species is a contaminant and/or does not harbor any relevant metabolic activity
  - o The species is undesirable in food for scientifically documented reasons.

Microorganisms conferring a health benefit to the host (FAO and WHO, 2002) are thus included if they are part of a culture used in a food fermentation process, whereas we have decided not to include microbial species of probiotic strains only used in supplements or over the counter (OTC) products.

As part of the process of reviewing the microbial species used in food fermentations, we also review the regulatory systems, some of the legal terms, and scientific criteria relevant for microbial food cultures (MFC). Accordingly, we have structured the review to cover:

- Regulatory systems and legal terms
- Scientific criteria
- Inventory of microbial species in food fermentations.

2. Regulatory systems and legal terms

2.1. Definition of MFC

It is remarkable that MFC have not been defined legally. To alleviate this, EFFCA has proposed the following definition: "Microbial food cultures are live bacteria, yeasts or molds used in food production". MFC preparations are formulations, consisting of one or more microbial species and/or strains, including media components carried over from the fermentation and components which are necessary for their survival, storage, standardization, and to facilitate their application in the food production process.

2.2. Definition of "history of use"

The concept of "history of safe use" has appeared recently in regulations and in safety assessment guidance. One definition of "history of safe use" proposes "significant human consumption of food over several generations and in a large, genetically diverse population for which there exist adequate toxicological and allergenicity data to provide reasonable certainty that no harm will result from consumption of the food" (Health Canada, 2003). In order to evaluate the history of safe use of a microorganism, it is necessary to document not just the occurrence of a microorganism in a fermented food product, but also to provide evidence whether the presence of the microorganism is beneficial, fortuitous, or undesired.

2.3. US regulatory environment

In the United States, food and substances used in food are regulated according to the Food Drug and Cosmetic Act (1958), in which the status of Generally Recognized As Safe (GRAS) was introduced (FDA, 2010). Accordingly, a GRAS substance is generally recognized, among qualified experts, as having been adequately shown to be safe under the conditions of its intended use. A substance recognized for such use prior to 1958 is by default GRAS (like food used in the EU prior to May 15, 1997, not being Novel Food) (Anon, 1997, ILSI Europe Novel Food Task Force, 2003). MFC are an integral part of traditional fermented foods. As a significant number of people have consumed these foods for many centuries before 1958, the fermenting microorganisms of these products can be said to be GRAS. If a substance (microorganism) is GRAS for one food usage, it is not necessarily GRAS for all food uses. It is the use of a substance rather than the substance itself that is GRAS, as the safety determination is always limited to its intended conditions of usage. When microorganisms with a safe history in food are employed for a different use or at a significantly higher dosage, a GRAS determination for these new usages is needed.

There are three ways to obtain GRAS status for an MFC:

1. A GRAS notification where a person/company informs FDA of a determination that the usage of a substance is GRAS and followed by the receipt of a no-objection letter from FDA
2. A GRAS determination made by qualified experts outside of the US government and the result is kept by the person/company behind the determination
3. GRAS due to a general recognition of safety, based on experience from common use in food by a significant number of people before 1958.

Lists of microorganisms and microbial derived ingredients used in foods can be found at the FDA web site (FDA, 2001). As a result of the different ways to obtain GRAS, the FDA lists of GRAS substances are not expected to include all substances, nor all pre-1958 natural, nutritional substances. For a more comprehensive US regulatory update on MFC, we refer to a recent review by Stevens and O'Brien Nabors (2009).

2.4. European regulatory environment

In the European Union, the MFCs are considered ingredients and must satisfy the legal requirements of regulation EC no. 178/2002. Consequently, the responsibility for the safe use of microorganisms in food should be ensured by food manufacturers.

In 2007, the European Food Safety Authority (EFSA) introduced "Qualified Presumption of Safety" (QPS) for a premarket safety assessment of microorganisms used in food and feed production. QPS is applicable to food and feed additives, food enzymes and plant protection products (Anon, 2005). The QPS system was proposed to harmonize approaches to the safety assessment of microorganisms across the various EFSA scientific panels. The QPS approach is meant to be a fast track for species for which there is a sufficient body of knowledge that all strains within a species are assumed to be safe. This presumption may be qualified by some restrictions such as the absence of specific characteristics (for example the absence of transmissible antibiotic resistance, absence of food poisoning toxins, absence of surfactant activity, and absence of enterotoxic activity). The QPS list covers only selected groups of microorganisms which have been referred to EFSA for a formal assessment of safety (Anon, 2005; Leuschner et al., 2010). Seventy-nine species of microorganisms have so far been submitted to EFSA for a safety assessment; the list is updated annually (EFSA, 2007, 2008, 2009, 2010). The absence of a particular organism from the QPS list does not necessarily imply a risk associated with its use. Individual strains may be safe, but this cannot be ascertained from the existing knowledge of the taxonomic unit to which it belongs. Another reason for a species not being on the list could be that EFSA has not been asked to assess the safety of any strains of the species. A recent review (Herody et al., 2010) gives a thorough description of the European regulatory environment for microbial food cultures.

Denmark is the nation with the first national legislation (since 1974) that specifically requires safety approval of MFC. More than 80 species used in 14 different food categories have been approved and published at the Danish Veterinary and Food Administration web site (Anon, 2009). In 2010, the regulation was changed. Approval is no longer needed, but a notification of a new species or a new application is still required before it can be marketed in Denmark. This topic has also recently been investigated by Germany (Vogel et al., 2011).

3. Scientific criteria for evaluation of MFC

3.1. Taxonomy

Taxonomy and systematics constitute the basis for the regulatory frameworks for MFCs. It is thus somewhat unfortunate that the definition of microbial species as a taxonomic unit lacks a theoretical basis (Stackebrandt, 2007). For this reason, we briefly outline the current status of bacterial and fungal taxonomy.

In the third edition of Prokaryotes (Stackebrandt, 2006), Stackebrandt proposes a prokaryotic species to be defined by:

- a phylogenetic component given as "the smallest diagnosable cluster of individual organisms within which there is a parental pattern of ancestry and descendents" (Cracraft, 1983),

and

- a taxonomic component given as "a group of related organisms that is distinguished from similar groups by a constellation of significant genotypic, phenotypic, and ecological characteristics." (Colwell, 1970).

In general, a polyphasic approach to taxonomy is recommended in bacteriology (Vandamme et al., 1996). In practice, this means that a bacterial species is represented by a type strain with strains showing a high degree of phenotypic and/or genotypic similarity to the type strain regarded as belonging to the same species. Whilst objective measures of relatedness have been proposed (such as percentage genome hybridization or sequence similarity), there is no simple definition of the species as a taxonomical unit.

As a basis for the current taxonomy of prokaryotes we have used the classification of the International Committee on Systematics of Prokaryotes (ICSP—http://www.the-icsp.org/) and available publications in International Journal of Systematic and Evolutionary Microbiology (IJSEM—http://ijs.sgmjournals.org/). The Taxonomic Outline of the Bacteria and Archea (TOBA—http://www.taxonomicoutline.org/) in its release 7.7 of March 6, 2007, and the amended lists of bacterial names (Skerman et al., 1989) were used as reference.

In fungal taxonomy different concepts to define microbial species are used without reaching a final consensus between the numerous relationships observed between phenotypic and molecular methods (Guarro et al., 1999; Hawksworth, 2006). Several definitions have been used to describe the yeast domain. Yeasts may be defined as being ascomycetous or basidiomycetous fungi that reproduce vegetatively by budding or fission, with or without pseudohyphae and hyphae, and forming sexual states that are not enclosed in fruiting bodies (Boekhout and Robert, 2003). Phylogenetic studies have now clearly shown the clustering of the hemiascomycetous yeasts forming a single clade within the ascomycota, the other yeasts belonging to the basidiomycetes (Hibbett et al., 2007).

Yeasts used to be commonly identified phenotypically, but they are now identified from diagnostic sequences (Daniel and Meyer, 2003). Techniques using molecular biology are seen as an alternative to traditional methods since they analyze the genome independently of the physiological characteristics, which may vary within the species (Boekhout and Robert, 2003; Fernández-Espinar et al., 2006; Kurtzman et al., 2011). Molecular techniques are more reproducible and faster than the conventional methods based on physiological and morphological characteristics. Furthermore, these techniques prevent misclassification of species on the basis of their sexuality. In some cases, ribosomal D1/D2 sequence comparison cannot discriminate between species, and more discriminating sequences have to be used in parallel (Jacques and Casaregola, 2008). Overall, a combination of proven loci such as *ACT1*, *RPB1* and *RPB2*, and Elongation Factor genes are suitable, if they are included in a multilocus analysis. Genomic studies have greatly helped the search for yeast identification markers (Casaregola et al., 2011; Aguileta et al., 2008).

The variability in the fungal kingdom is even wider considering molds: estimations are currently rated around 100 000 species. It is thought that there are between 700 000 to 1.5 million species that are yet to be identified and classified (McLaughlin et al., 2009). Recently, a comprehensive monograph on all the genera of anamorphic fungi (hyphomycetes, fungi imperfecti, deuteromycetes, asexual fungi) was published (Seifert et al., 2011). This book, together with the Dictionary of the Fungi (Kirk et al., 2008), gives an overview of the taxonomic status of all genera of filamentous fungi.

As for the current taxonomy of fungi, we have used the references and documentation provided by the International Commission on the Taxonomy of Fungi (ICTF) on their website (http://www.fungaltaxonomy.org/) and the Mycobank initiative (Crous et al., 2004), as well as expert groups on invasive fungal infections and taxonomic issues (Mycoses Study Group—http://www.doctorfungus.org/).

3.2. Undesirable properties of MFC

Although they have been used since ancient times in fermentation processes without any identified major concern, recent discovery of rare events of adverse effects caused by microorganisms in fermented foods raise uncertainty about the level of risk, depending either on the food matrix or the susceptibility of the host (Gasser, 1994; Miceli et al., 2011).

3.2.1. Opportunistic infections

Commensal bacteria have been described to cause infections in patients with underlying disease (Berg and Garlington, 1979; Berg, 1985, 1995). Owing to its natural presence in different sites of the human body and in fermented food products, the genus *Lactobacillus* has gained particular attention. *Lactobacillus* infections occur at a very low rate in the generally healthy population—estimated 0.5/1 million per year (Borriello et al., 2003; Bernardeau et al., 2006). As stated in two reviews of *Lactobacillus* infections: “Underlying disease or immunosuppression are common features in these cases, whereas infection in previously healthy humans is extremely rare” (Aguirre and Collins, 1993). “*Lactobacillus* bacteraemia is rarely fatal *per se* but serves as an important marker of serious underlying disease” (Husni et al., 1997). Sporadic infections have been reported in immuno-compromised patients. The underlying problems have mainly been central venous catheter (CVC) in place, metabolic disorders, organ failure, or invasive procedures such as dental work (Axelrod et al., 1973; Liong, 2008). Infections by other bacterial species used as MFC are also extremely rare (Horowitz et al., 1987; Barton et al., 2001; Mofredj et al., 2007; Leuschner et al., 2010).

Infections with the commonly used yeast and mold species are rare events as well (Enache-Angoulvant and Hennequin, 2005). Most of the infections are due to opportunistic pathogens not recognized as MFC and affect immuno-compromised patients and hospitalized patients (Winer-Muram, 1988; Jacques and Casaregola, 2008; Miceli et al., 2011).

3.2.2. Toxic metabolites and virulence factors

Biogenic amine formation in fermented foods by lactic acid bacteria (LAB) has recently been reviewed (Spano et al., 2010). Following food poisoning outbreaks (Sumner et al., 1985), metabolic pathways have been elucidated (Straub et al., 1995) and screening procedures proposed to limit the level of production (Bover-Cid and Holzapfel, 1999; Bover-Cid et al., 2000).

The presence of mycotoxin genes also raises safety concerns, although the level of expression within fermented food is very unlikely to cause any health hazard (Barbesgaard et al., 1992). Within fungi, the potential for antibiotic production is also an undesired property.

The occurrence of virulence traits should not be present in microorganisms used in food fermentation. A specific risk assessment should be conducted on strains presenting these undesirable properties, even if they belong to a species with a long history of use (Semedo et al., 2003a, 2003b).

3.2.3. Antibiotic resistance

The emergence and spread of antibiotic resistance is a major global health concern. The on-going Codex ad hoc intergovernmental task force on antimicrobial resistance is focused on the non-human use of antimicrobials. Microorganisms intentionally added to food and feed for technological purposes have not been shown to aggravate the problem of spreading antibiotic resistant pathogens (Anon, 2001).

Intrinsic resistance or resistance that is caused by mutation in an indigenous gene not associated with mobile elements would represent a very low risk of dissemination (Saarela et al., 2007). Acquired antibiotic resistance genes, especially when associated with mobile genetic elements (plasmids, transposons), can be transferred to pathogens or other commensals along the food chain, from within the product until consumption (FEEDAP, 2005, 2008; Nawaz et al., 2011).

The role of MFC in the spread of antibiotic resistance has been assessed in fermented foods (Nawaz et al., 2011) as well as more specifically for probiotic food products (Saarela et al., 2007; Mater et al., 2008; Vankerckhoven et al., 2008). Results of such studies confirm the role of a reservoir of antibiotic resistance genes from the food microbiota, without identifying any major health concerns to date.

It is considered that strains carrying acquired antibiotic resistance genes might act as a reservoir of transmissible antimicrobial resistance determinants (FEEDAP, 2005, 2008). Gene transfer of antibiotic resistance between microorganisms in the food and feed chain is thus considered to be a topic of surveillance for the safety demonstration of microorganisms (FAO and WHO, 2001, 2002; Borriello et al., 2003; Gueimonde et al., 2005).

4. Inventory of microbial species used in food fermentations

The “2002 IDF Inventory” listed 82 bacterial species and 31 species of yeast and molds whereas the present “Inventory of MFC” contains 195 bacterial species and 69 species of yeasts and molds. The overview of the distribution of species over the relevant taxonomic units is given in Table 1 for bacteria and Tables 2 and 3 for fungi. We publish the complete current "Inventory of Microbial Food Cultures" as accompanying material to the present paper.

4.1. Bacteria

4.1.1. Actinobacteriaceae

The genus *Brachybacterium* enters the list with two species, *B. alimentarium* and *B. tyrofermentans*. Both species have been characterized as important and beneficial components of the surface microbiota of Gruyère and Beaufort cheese (Schubert et al., 1996).

Microbacterium enters the list with one species, *M. gubbeenense*. *M. gubbeenense* is a component of the traditional red smear surface culture of surface ripened cheeses (Bockelmann et al., 2005). The species was first proposed by Brennan and colleagues in 2001 (Brennan et al., 2001), and before this, *M. gubbeenense* isolates would have been considered members of *Arthrobacter nicotinae*, a species included in the "2002 IDF Inventory".

Bifidobacterium was represented with eight species in the 2002 IDF inventory. On the one hand, the species *B. infantis* disappears, as this taxon is now transferred to *B. longum* as *B. longum* subsp. *infantis*. On the other hand, the species *B. thermophilum* is included on the list as this species is reported to have food applications (Xiao et al., 2010).

The species *Brevibacterium aurantiacum*, established in 2005, has entered the list. This species is like the two other *Brevibacterium* species, *B. linens* and *B. casei*, a component of the red smear ripening microbiota for surface ripened cheeses (Leclercq-Perlat et al., 2007).

Corynebacterium casei and *Corynebacterium variabile* are added to the list as both are components of the surface ripening microbiota. *C. casei* is a relatively "new" species (Bockelmann et al., 2005).

Micrococcus was represented with one species on the 2002 IDF inventory, *M. varians*. The species was renamed and attributed to the genus *Kocuria* (Stackebrandt et al., 1995). On the current list, *Micrococcus* is represented with the two species, *M. luteus* and *M. lylae*, used for cheese ripening and meat fermentation, respectively (Bonnarme et al., 2001; Garcia Fontan et al., 2007).

Propionibacterium includes one new subspecies of *P. freudenreichii* subsp. *globosum*, and the newly added species *P. jensenii*. The species *P. arabinosum* is considered synonymous with *P. acidipropionici* and is thus no longer on the list as a separate entity.

Table 1
Bacterial diversity in the 2011 update of microorganisms with beneficial use.

Phylum	Family	Genus	Species
Actinobacteria	*Bifidobacteriaceae*	*Bifidobacterium*	8
	Brevibacteriaceae	*Brevibacterium*	3
	Corynebacteriaceae	*Corynebacterium*	4
	Dermabacteraceae	*Brachybacterium*	2
	Microbacteriaceae	*Microbacterium*	1
	Micrococcaceae	*Arthrobacter*	4
		Kocuria	2
		Micrococcus	2
	Propionibacteriaceae	*Propionibacterium*	5
	Streptomycetaceae	*Streptomyces*	1
Actinobacteria—species			32
Firmicutes	*Bacillaceae*	*Bacillus*	3
	Carnobacteriaceae	*Carnobacterium*	3
	Enterococcaceae	*Enterococcus*	3
		Tetragenococcus	2
	Lactobacillaceae	*Lactobacillus*	84
		Pediococcus	3
	Leuconostocaceae	*Leuconostoc*	12
		Oenococcus	1
		Weissella	9
	Staphylococcaceae	*Macrococcus*	1
		Staphylococcus	15
	Streptococcaceae	*Lactococcus*	3
		Streptococcus	3
Firmicutes—species			142
Proteobacteria	*Acetobacteraceae*	*Acetobacter*	9
		Gluconacetobacter	9
	Enterobacteriaceae	*Hafnia*	1
		Halomonas	1
	Sphingomonadaceae	*Zymomonas*	1
Proteobacteria—species			21
Total number of species			195

Table 2
Fungal diversity in the 2011 update of microorganisms with beneficial use.

Phylum	Family	Genus	Species
Ascomycota	*Cordycipitaceae*	*Lecanicillium*	1
	Dipodascaceae	*Geotrichum*	1
		Yarrowia	1
		Galactomyces	1
	Microascaceae	*Scopulariopsis*	1
	Nectriaceae	*Fusarium*	2
	Saccharomycetaceae	*Candida*	10
		Cyberlindnera	2
		Debaryomyces	1
		Dekkera	1
		Hanseniaspora	3
		Kazachstania	2
		Kluyveromyces	1
		Lachancea	2
		Metschnikowia	1
		Pichia	4
		Saccharomyces	4
		Schwanniomyces	1
		Starmerella	1
		Trigonopsis	1
		Wickerhamomyces	1
		Zygosaccharomyces	1
		Zygotorulaspora	1
		Kluyveromyces	1
	Sarcosomataceae	*Torulaspora*	1
	Schizosaccharomycetaceae	*Schizosaccharomyces*	1
	Sordariaceae	*Neurospora*	1
	Trichocomaceae	*Aspergillus*	4
		Penicillium	7
Ascomycota—species			59
Basidiomycota	*Cystofilobasidiaceae*	*Cystofilobasidium*	1
		Guehomyces	1
Basidiomycota—species			2
Zygomycota	*Mucoraceae*	*Mucor*	4
		Rhizopus	4
Zygomycota—species			8
Total number of species			69

4.1.2. Firmicutes

The genus *Carnobacterium* is new on the list and is now represented by three species, *C. divergens*, *C. maltaromaticum*, and *C. piscicola*. The inclusion of *Carnobacterium* commonly used in meat fermentations stems from widening the scope of the list from dairy to food fermentations (Hammes et al., 1992).

The genus *Tetragenococcus* was proposed in 1990 and validated in 1993 for newly identified species and some species previously belonging to *Pediococcus* and *Enterococcus*.

The genus *Weissella* was introduced in 1993 for some species previously belonging to the *Leuconostoc mesenteroides* species group. *Weissella* would have been in the 2002 IDF inventory if meat cultures had been included at the time. *Weissella* species are used for fermentation of meat, fish, cabbage (Kimchi), cassava, and cocoa (Collins et al., 1993).

Among the enterococci, *Enterococcus faecalis* has entered the list owing to its use in dairy, meat, vegetables and probiotics (Foulquie Moreno et al., 2006).

The genus *Lactobacillus* was already widely present in the initial inventory. Owing to its wide use in other food matrices and the new scope of the inventory, this is the genus with the largest number of changes and now represented by 82 species.

Table 3
Filamentous fungi and yeasts for beneficial use and their teleomorphs, anamorphs and most important synonyms.

Current name	Teleomorphic state	Anamorphic state	Important synonyms
Aspergillus acidus	–	Aspergillus acidus	Aspergillus foetidus
Aspergillus niger		Aspergillus niger	
Aspergillus oryzae		Aspergillus oryzae	
Aspergillus sojae		Aspergillus sojae	
Candida etchellsii		Candida etchellsii	Torulopsis etchelsii
Candida milleri		Candida milleri	Candida humilis
Candida oleophila		Candida oleophila	Candida deformans
Candida rugosa		Candida rugosa	Mycoderma rugosum
Candida tropicalis		Candida tropicalis	Odium tropicale, Candida kefyr
Candida versatilis		Candida versatilis	Torulopsis versatilis
Candida zemplinina		Candida zemplinina	
Candida zeylanoides		Candida zeylanoides	Monilia zeylanoides
Cyberlindnera jadinii	Cyberlindnera jadinii	Candida guillermondii	Candida utilis Hanseluna jadinii
Cyberlindnera mrakii	Cyberlindnera mrakii		Williopsis mrakii, Hansenula mrakii
Cystofilobasidium infirmominiatum	Cystofilobasidium infirmominiatum	Cryptococcus infirmominiatus	Rhodosporium infirmominatum
Debaryomyces hansenii	Debaryomyces hansenii	Atelosaccharomyces hudeloi	Pichia hansenii
Dekkera bruxellensis	Dekkera bruxellensis	Brettanomyces abstinens	
Fusarium domesticum		Fusarium domesticum	Trichothecium domesticum
Fusarium venenatum		Fusarium venenatum	
Galactomyces candidum	Galactomyces candidum		
Geotrichum candidum		Geotrichum candidum	Acrosporium candidum
Guehomyces pullulans		Guehomyces pullulans	Trichosporon fuscans
Hanseniaspora guilliermondii	Hanseniaspora guilliermondii	Kloeckera apiculata	Hanseniaspora apuliensis
Hanseniaspora osmophila	Hanseniaspora osmophila	Kloeckera corticis	
Hanseniaspora uvarum	Hanseniaspora uvarum	Kloeckeraspora uvarum	Hanseniaspora apiculata
Kazachstania exigua	Kazachstania exigua	Candida holmii	
Kazachstania unispora	Kazachstania unispora		Saccharomyces unisporus
Kluyveromyces lactis	Kluyveromyces lactis		Saccharomyces lactis
Kluyveromyces marxianus	Kluyveromyces marxianus	Atelosaccharomyces pseudotropicalis	Saccharomyces marxianus
Lachancea fermentati	Lachancea fermentati		Zygosaccharomyces fermentati
Lachancea thermotolerans	Lachancea thermotolerans		Kluyveromyces thermotolerans
Lecanicillium lecanii	Cordyceps confragosa	Lecanicillium lecanii	Verticillium lecanii
Metschnikowia pulcherrima	Metschnikowia pulcherrima	Asporomyces uvae	Candida pulcherrima
Mucor hiemalis			
Mucor mucedo			
Mucor plumbeus			
Mucor racemosus			
Neurospora sitophila	Neurospora sitophila	Chrysonilia sitophila	
Penicillium camemberti		Penicillium camemberti	Penicillium album, Penicillium candidum, Penicillium caseicola, Penicillium rogeri
Penicillium caseifulvum		Penicillium caseifulvum	
Penicillium chrysogenum		Penicillium chrysogenum	Penicillium notatum
Penicillium commune		Penicillium commune	Penicillium cyclopium
Penicillium nalgiovense		Penicillium nalgiovense	
Penicillium roqueforti		Penicillium roqueforti	Penicillium aromaticum, Penicillium gorgonzolae, Penicillium stilton
Penicillium solitum		Penicillium solitum	Pemicillium casei, Penicillium mali
Pichia fermentans	Pichia fermentans		Zymopichia fermentans
Pichia kluyveri	Pichia kluyveri		Hansenula kluyveri
Pichia kudriavzevii	Pichia kudriavzevii	Candida acidothermophilum	Issatchenkia orientalis
Pichia membranifaciens	Pichia membranifaciens		Saccharomyces membranifaciens
Pichia occidentalis	Pichia occidentalis	Candida soli	
Pichia pijperi	Pichia pijperi		Wickerhamomyces pijperi, Hanseniasporia pijperi
Rhizopus microsporus			Mucor microsporus
Rhizopus oligosporus			
Rhizopus oryzae			Rhizopus arrhizus, Mucor arrhizus
Rhizopus stolonifer			Mucor stolonifer
Saccharomyces bayanus	Saccharomyces bayanus		Saccharomyces uvarum
Saccharomyces cerevisiae	Saccharomyces cerevisiae		
Schizosaccharomyces pombe	Schizosaccharomyces pombe		Saccharomyces pombe
Schwanniomyces vanrijiae	Schwanniomyces vanrijiae		Pichia vanrijiae
Scopulariopsis flava		Scopulariopsis flava	Acaulium flavum
Starmerella bombicola	Starmerella bombicola		
Torulaspora delbrueckii	Torulaspora delbrueckii	Candida colliculosa	Zymodebaryomyces delbrueckii
Torulopsis candida		Torulopsis candida	Cryptococcus candidus
Torulopsis holmii		Torulopsis holmii	Candida holmii

Table 3 (*continued*)

Current name	Teleomorphic state	Anamorphic state	Important synonyms
Trigonopsis cantarellii	*Trigonopsis cantarellii*		*Candida cantarellii*, *Torulopsis vinacea*
Wickerhamomyces anomalus	*Wickerhamomyces anomalus*	*Candida beverwijkiae*	*Saccharomyces anomalus*
Yarrowia lipolytica	*Yarrowia lipolytica*	*Candida deformans*	*Saccharomycopsis lipolytica*
Zygosaccharomyces rouxii		*Zygosaccharomyces rouxii*	*Zygosaccharomyces japonicas*, *Torulaspora rouxii*
Zygotorulaspora florentina	*Zygotorulaspora florentina*		*Saccharomyces florentinus*, *Torulapora florentinus*

Leuconostoc is also a genus having expanded considerably from the two species present in the 2002 IDF inventory. This is mainly due to the inclusion of species useful for coffee and vegetable fermentations, among which are also several species being proposed recently as *L. holzapfelii*, *L. inhae*, *L. kimchii*, and *L. palmae*.

Staphylococcus is now represented by 13 species. The growth in number is caused by the consideration of mostly meat fermentation processes and the role in numerous other food matrices (Nychas and Arkoudelos, 1990).

Lactococcus has only been expanded with a single species *L. raffinolactis*, a species occasionally involved in the ripening of cheese (Ouadghiri et al., 2005).

Also *Streptococcus* has increased with a single species, due to the use of *S. gallolyticus* subsp. *macedonicus* in ripening cultures for cheese (Georgalaki et al., 2000).

Bacillus species have been included in the inventory due to the widening of scope by incorporation of new food matrices such as cocoa beans (Schwan and Wheals, 2010) and soy beans (Kubo et al., 2011).

4.1.3. Proteobacteriaceae

Acetobacter and *Gluconacetobacter* are represented by nine and eight species, respectively. They are mainly utilized in the production of vinegar, but also of importance in the fermentation of cocoa and coffee (Sengun and Karabiyikli, 2011).

Halomonas elongata, a new species of the family *Enterobacteriaceae*, was added to the list because of its relevance in meat fermentation (Hinrichsen et al., 1994).

As a consequence of the widened scope of the inventory, the genus *Zymomonas* has been added to the list. It is represented by the species *Z. mobilis*, which is widely used for the fermentation of alcoholic beverages in many tropical areas of America, Africa, and Asia (Rogers et al., 1984; Escalante et al., 2008).

Klebsiella mobilis, formerly *Enterobacter aerogenes* in the 2002 IDF inventory, was rejected as the reference of food usage (Gassem, 1999) indicated the species as part of the spoilage microbiota.

4.2. Fungi

The number of recognized species with beneficial use for foods has grown considerably. Contributions to the expansion come from changes in taxonomy and description of species to be important in natural fermentations or used as inoculants (Table 3). We have added 24 eukaryotic genera: *Aspergillus*, *Cyberlindnera*, *Cystofilobasidium*, *Dekkera*, *Guehomyces*, *Hanseniaspora*, *Kazachstania*, *Lachancea*, *Lecanicillium*, *Metschnikowia*, *Mucor*, *Neurospora*, *Rhizopus*, *Schizosaccharomyces*, *Schwanniomyces*, *Scopulariopsis*, *Sporendonema*, *Starmerella*, *Torulaspora*, *Trigonopsis*, *Wickerhamomyces*, *Yarrowia*, *Zygosaccharomyces*, and *Zygotorulaspora*. Widening the scope of food matrices covers a large number of the additions. The inclusion of wine and beverages leads to the addition of the following yeast species: *Cyberlindnera*, *Dekkera*, *Hanseniaspora*, *Lachancea*, *Metschnikowia*, *Schizosaccharomyces*, *Schwanniomyces*, *Starmerella*, *Trigonopsis*, and *Wickerhamomyces*; and the inclusion of soy and vegetable fermentations leads to the addition of the following yeast and filamentous fungi: *Aspergillus*, *Guehomyces*, *Mucor*, *Neurospora*, *Rhizopus*, and *Zygosaccharomyces*.

The changes in taxonomy have, however, also contributed to changing the appearances in the inventory. Most of the species recorded as *Candida* in the former list have been transferred to other genera or included under the teleomorphic name (Table 3). Recently, it has been suggested by many mycologists that only one name should be given to any fungus, as is already done in Zygomycota. Thus it would be preferred to refer to the most well-known species as *Saccharomyces cerevisiae* (the teleomorphic and holomorphic name), rather than the anamorphic name *Candida robusta*. According to present rules as guided by the International Code of Botanical Nomenclature Article 59, fungi in Ascomycota and Basidiomycota can have two names; one for the teleomorph and holomorph, which is recommended, and one for the anamorphic state.

4.2.1. Yeasts

Candida famata is the anamorph of *Debaryomyces hansenii*. *Candida utilis*, used for single cell protein production, should be called *Cyberlindnera jadinii*. *Williopsis mrakii* (= *Hansenula mrakii*) is now also included in the genus *Cyberlindnera* as *C. mrakii*. *Saccharomyces unisporus* has been transferred to *Kazachstania unispora*, and *Candida holmii* has also been transferred to *Kazachstania* as *K. exigua*. *Candida krusei* is now called *Pichia kudriavzevii*. *Candida kefyr (= Candida pseudotropicalis)* is placed in *Kluyveromyces marxianus*. *Candida valida* is now called *Pichia membranefaciens* and finally *Saccharomyces florentinus* is now called *Zygotorulaspora florentina* (Table 3; Boekhout and Robert, 2003; Kurtzman et al., 2011). Regarding *Candida*, many additional species have been suggested for beneficial use in foods, including *C. etchellsii*, *C. intermedia*, *C. maltosa*, *C. versatilis* and *C. zeylanoides*. Teleomorphic states are not known for these species. Other species recently suggested include *Clavispora lusitanae*, *Cystofilobasidium infirmominiatum*, *Dekkera bruxellensis*, *Hanseniaspora uvarum*, *Kazachstania turicensis*, *Metschnikowia pulcherrima*, *Pichia occidentalis*, *Rhodosporidium* sp., *Saccharomyces pastorianus*, *Saccharomycopsis fibuligera*, *Saturnisporus saitoi*, *Sporobolomyces roseus*, *Torulaspora delbrueckii*, *Trichosporon cutaneum*, *Wickerhamomyces anomalus*, *Yarrowia lipolytica*, *Zygosaccharomyces bailii*, and *Z. rouxii*. In the current update of the inventory of microorganisms, we tend to be conservative and only include species with a well-documented technological benefit. One example is *Dekkera bruxellensis* (anamorph *Brettanomyces bruxellensis*), which was formerly regarded as a spoiler of beer (and wine). However, it is used for production of Belgian Lambic-Geuze beer. *D. bruxellensis* produces acetic acid that in moderate amounts gives a unique taste to those beers (Boekhout and Roberts, 2003). Other examples are *Debaryomyces hansenii* and *Yarrowia lipolytica* which are very important for aroma formation in Munster and Parmesan cheeses. *Saccharomyces cerevisiae*, *Hanseniaspora uvarum*, *Kluyveromyces marxianus* and *Pichia fermentans* are extremely important for the development of the fine aroma of cocoa beans (Boekhout and Roberts, 2003).

4.2.2. Filamentous fungi

Relatively few filamentous fungi have been added to the list since the last compilation. However, several fungal starter cultures commonly used in Asia could potentially be used in Europe, as fungi can add fiber, vitamins, proteins etc. to fermented foods, or be consumed as single cell protein (SCP) (Nout, 2000, 2007). *Aspergillus* species and other fungi found in Asian traditional fermented foods were not mentioned in the first 2002 IDF inventory list as they are not commonly used in fermented dairy products. For instance *Aspergillus oryzae* and *A. sojae* are used in the production of miso and soya sauce fermentations. *Aspergillus oryzae* and *A. niger* are also used for production of sake and awamori liquors, respectively (Nout, 2000, 2007). *Aspergillus acidus* is used for fermenting Puerh tea (Mogensen et al., 2009).

Rhizopus oligosporus is used in the fermentation process of Tempeh (Hachmeister and Fung, 1993).

Fusarium domesticum was first identified as *Trichothecium domesticum*, but was later allocated to *Fusarium* (Bachmann et al., 2005; Schroers et al., 2009; Gräfenham et al., 2011). This species has been used for cheese fermentations (cheese smear). *Fusarium solani* DSM 62416 was isolated from a Vacherin cheese, but has not been examined taxonomically in detail yet. *Fusarium venenatum* A 3/5 (first identified as *F. graminearum*) is being used extensively for mycoprotein production in Europe (Thrane, 2007). This strain is capable of producing trichothecene mycotoxins in pure culture, but does not produce them under industrial conditions (Thrane, 2007).

Penicillium camemberti is the correct name for the mold use for all white-mold cheeses (Frisvad and Samson, 2004). Even though *P. commune*, *P. biforme*, *P. fuscoglaucum*, and *P. palitans* are found on cheese, either as contaminants or “green cheese mold”, they are not necessarily suitable for fermenting cheeses. *P. commune* is the wild-type “ancestor” of *P. camemberti* however (Pitt et al., 1986; Polonelli et al., 1987; Giraud et al., 2010).

A species closely related to *P. camemberti*, *P. caseifulvum* has an advantage in not producing cyclopiazonic acid, a mycotoxin often found in *P. camemberti* (Lund et al., 1998; Frisvad and Samson, 2004). *P. caseifulvum* grows naturally on the surface of blue mold cheeses and has a valuable aroma (Larsen, 1998). Important mycotoxins identified in these species include cyclopiazonic acid and rugulovasine A and B (Frisvad and Samson, 2004), and cyclopiazonic acid can be detected in white-mold cheeses (Le Bars, 1979; Teuber and Engel, 1983; Le Bars et al., 1988).

Blue-mold cheeses are always fermented with *Penicillium roqueforti*, and not with the closely related species *P. carneum*, *P. paneum* or *P. psychrosexualis*. The latter three species produce several mycotoxins (Frisvad and Samson, 2004; Houbraken et al., 2010) and have often been referred to as *P. roqueforti* (Engel and von Milczewski, 1977; von Krusch et al., 1977; Olivigni and Bullerman, 1978; Engel and Prokopek, 1980; Teuber and Engel, 1983; Erdogan and Sert, 2004). However, *P. roqueforti* itself can produce the secondary metabolites PR-toxin, roquefortine C, mycophenolic acid and andrastin A in pure culture (Frisvad et al., 2004; Nielsen et al., 2005). One of these secondary metabolites is regarded as a mycotoxin, PR-toxin. This mycotoxin is unstable in cheese and is converted to PR-imine (Engel and Prokopek, 1979; Siemens and Zawistowski, 1993). Mycophenolic acid (Lafont et al., 1979; López-Díaz et al., 1996), roquefortine C (López-Díaz et al., 1996; Finoli et al., 2001) and andrastin A (Nielsen et al., 2005; Fernández-Bodega et al., 2009) have been found in blue cheese, but the consequences to human health are probably minor (Larsen et al., 2002). Yet another species, *Penicillium solitum* is found on naturally fermented lamb meat on the Faroe Islands, and may be used as a starter culture. This species does not produce any known mycotoxins (Frisvad et al., 2004). On other meat products, *Penicillium nalgiovense* and few strains of *Penicillium chrysogenum* are used (Nout, 2000; Frisvad and Samson, 2004), especially for mold-fermented salami. However, *P. nalgiovense* was originally found on cheeses from Nalzovy, and may be used for fermenting cheeses too.

Verticillium lecanii has changed to *Lecanicillium lecanii* (Zare and Gams, 2001), and this strain has been listed as potentially useful for cheese ripening (see Tables 2 and 3).

Finally, some fungi can be used to produce food colorants, including *Epicoccum nigrum* and *Penicillium purpurogenum*, but these fungi are not used directly for food fermentation (Stricker et al., 1981; Mapari et al., 2010).

5. Conclusion

The list of microorganisms with a history of use in food originally included 31 genera in the 2002 IDF inventory, and was essentially limited to the microbial use in dairy matrices. By also considering other food matrices, we consider 62 genera in the 2011 update. One was rejected as its usage in food has not been documented and the initial reference in the 2002 IDF inventory was inadequate. The evolution in taxonomy, the extension of varied usages in other matrices, yeast fermentations and fungal foods have also resulted in a growing number of species; from 113 to 264 species with demonstration of food usage. There are many new possibilities, however, and these should be explored to a much greater extent.

Either in traditional fermented foods or as new opportunities, the rationalized use of microorganisms in our diet opens new perspectives. In recent years, microorganisms have been used in fields other than the traditional food industry: *Lactococcus spp.* is used for its potential role in vaccination, and microorganisms are also used for the specific production of biogenic compounds. As we did not consider fermentation in liquid tailor-made media, species used in an industrial microbiology process were not considered if no reference to food usage could be provided.

Microbiological research mostly focuses on the pathogenic potential of microorganisms, while neglecting their positive role. Recent scientific advances have revealed the preponderant role of our own microbiota, our “other genome”, from the skin, gut, and other mucosa. Though this remains undoubtedly promising, one should not forget that man has not yet finished characterizing traditional fermented foods consumed for centuries, with often numerous isolates belonging to species with undefined roles.

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Appendix A. Supplementary

Supplementary data to this article can be found online at doi:10.1016/j.ijfoodmicro.2011.12.030.

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Documented	Kingdom	Phylum	Family	Genus	Taxonomy	Food Usage	Reference Food Usage	QPS	Danish List	Type Strain	Reference Taxonomy
1963	Monera	Actinobacteria	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium adolescentis	Dairy	Rabiu, B.A., 2001. Synthesis and fermentation properties of novel galacto-oligosaccharides by beta-galactosidases from Bifidobacterium species. Appl Environ Microbiol. 67, 2526-30.	Y	Y	ATCC 15703	Reuter, G., 1963. Vergleichende Untersuchunge über die Bifidus-Flora im Säuglings- und Erwachsenenstuhl. Zentralbl. Bakteriol. Parasitenkd. Infektionskr. Hyg. Abt. 1, Orig. Reihe A191 486–507.
1969	Monera	Actinobacteria	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium animalis subsp animalis	Dairy	Biavati, B., Mattarelli, P., Crociani, F., 1992. Identification of bifidobacteria from fermented milk products. Microbiologica 15, 7-13.	Y	Y	ATCC 25527	Mitsuoka, T., 1969. Comparative studies on bifidobacteria isolated from the alimentary tract of man and animals. Zentralbl. Bakteriol. Parasitenkd. Infektionskr. Hyg. Abt. 1, Orig. Reihe A210 52–64.
1980	Monera	Actinobacteria	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium animalis subsp lactis	Dairy	Biavati, B., Mattarelli, P., Crociani, F., 1992. Identification of bifidobacteria from fermented milk products. Microbiologica 15, 7-13.	Y	Y	DSM 10140	Meile, L., Ludwig, W., Rueger, U., Gut, C., Kaufmann, P., Dasen, G., Wenger, S., Teuber, M., 1997. Bifidobacterium lactis sp.nov., a moderately oxygen tolerant species isolated from fermented milk. Syst. Appl. Microbiol. 20, 57–64.
1924	Monera	Actinobacteria	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium bifidum	Dairy	Ventling, B.L., Mistry, V.V., 1993. Growth characteristics of bifidobacteria in ultrafiltered milk. J Dairy Sci. 76, 962-71.	Y	Y	ATCC 29521	Orla-Jensen, S., 1924. La classification des bactéries lactiques. Lait 4, 468–474.
1963	Monera	Actinobacteria	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium breve	Dairy, Soy	Scalabrini, P., Rossi, M., Spettoli, P., Matteuzzi, D., 1998. Characterization of Bifidobacterium strains for use in soymilk fermentation. Int J Food Microbiol. 39, 213-9.	Y	Y	ATCC 15700	Reuter, G., 1963. Vergleichende Untersuchunge über die Bifidus-Flora im Säuglings- und Erwachsenenstuhl. Zentralbl. Bakteriol. Parasitenkd. Infektionskr. Hyg. Abt. 1, Orig. Reihe A191 486–507.
1963	Monera	Actinobacteria	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium longum	Dairy	Mathieu-Chandelier, C., Colombel, J.F., Cortot, A., Neut, C., Romond, C., 1998. Effect of milk fermented with Bifidobacterium longum on colonic fermentation. Presse Med. 18, 358.	Y	Y	ATCC 15707	Reuter, G., 1963. Vergleichende Untersuchunge über die Bifidus-Flora im Säuglings- und Erwachsenenstuhl. Zentralbl. Bakteriol. Parasitenkd. Infektionskr. Hyg. Abt. 1, Orig. Reihe A191 486–507.
1969	Monera	Actinobacteria	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium pseudolongum subsp. pseudologum	Dairy	Rabiu, B.A., 2001. Synthesis and fermentation properties of novel galacto-oligosaccharides by beta-galactosidases from Bifidobacterium species. Appl Environ Microbiol. 67, 2526-30.		Y	ATCC 25526	Mitsuoka, T., 1969. Comparative studies on bifidobacteria isolated from the alimentary tract of man and animals. Zentralbl. Bakteriol. Parasitenkd. Infektionskr. Hyg. Abt. 1, Orig. Reihe A210, 52–64.
1969	Monera	Actinobacteria	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium thermophilum	Dairy	Xiao, J.Z., 2010. Distribution of in vitro fermentation ability of lacto-N-biose I, a major building block of human milk oligosaccharides, in bifidobacterial strains. Appl Environ Microbiol. 76, 54-9.		Y	ATCC 25525	Mitsuoka, T., 1969. Comparative studies on bifidobacteria isolated from the alimentary tract of man and animals. Zentralbl. Bakteriol. Parasitenkd. Infektionskr. Hyg. Abt. 1, Orig. Reihe A210, 52–64.
2004	Monera	Actinobacteria	Brevibacteriaceae	Brevibacterium	Brevibacterium aurantiacum	Dairy	Leclercq-Perlat, M.N., Corrieu, G., Spinnler, H.E., 2007. Controlled production of camembert-type cheeses: part III role of the ripening microflora on free fatty acid concentrations. J Dairy Res. 74, 218-25.			ATCC 9175	Gavrish, E.Yu., Krauzova, V.I., Potekhina, N.V., Karasev, S.G., Plotnikova, E.G., Altyntseva, O.V., Korosteleva, L.A., Evtushenko, L.I., 2004. Three new species of brevibacteria, Brevibacterium antiquum sp. nov., Brevibacterium aurantiacum sp. nov., and Brevibacterium permense sp. nov. Microbiology (English translation of Mikrobiologiya) 73, 176–183.
1983	Monera	Actinobacteria	Brevibacteriaceae	Brevibacterium	Brevibacterium casei	Dairy	Dolci P, Dolci, P., Barmaz, A., Zenato, S., Pramotton, R., Alessandria, V., Cocolin, L., Rantsiou, K., Ambrosoli, R., 2009. Maturing dynamics of surface microflora in Fontina PDO cheese studied by culture-dependent and -independent methods. J Appl Microbiol. 106, 278-87.		Y	ATCC 35513	Collins, M.D.,Farrow, J.A.E., Goodfellow, M., Minnikin, D.E., 1983. Brevibacterium casei sp.nov. and Brevibacterium epidermidis sp.nov. Systematic and Applied Microbiology 4, 388-395.
1944	Monera	Actinobacteria	Brevibacteriaceae	Brevibacterium	Brevibacterium linens	Dairy	Albert, J.O., Long, H.F., Hammer, B.W., 1944. Classification of the organisms important in dairy products. IV. Bacterium linens. Iowa State Coll. Agr. Expt. Sta. Bull.,No. 328.		Y	DSM20425	Bousfield, I.J., 1972. A Taxonomic Study of Some Coryneform Bacteria. Journal of General Microbiology 71, 441-455.
1987	Monera	Actinobacteria	Corynebacteriaceae	Corynebacterium	Corynebacterium ammoniagenes	Dairy	Bockelmann, W., Hoppe-Seyler, T., 2001. The surface flora of bacterial smear-ripened cheeses from cow's and goat's milk. International Dairy Journal 11, 307-314.			ATCC 6871	Collins, M.D., 1987 Transfer of Brevibacterium ammoniagenes (Cooke and Keith) to the genus Corynebacterium, as Corynebacterium ammoniagenes comb. nov. Int. J. Syst. Bacteriol. 37, 442–443.
2001	Monera	Actinobacteria	Corynebacteriaceae	Corynebacterium	Corynebacterium casei	Dairy	Bockelmann, W., Willems, K.P., Neve, H., Heller, K.H., 2005. Cultures for the ripening of smear cheeses. International Dairy Journal 15, 719-732.			DSM 44701	Brennan, N.M., Brown, R., Goodfellow, M., Ward, A.C., Beresford, T.P., Simpson, P.J., Fox, P.F., Cogan, T.M., 2001. Corynebacterium mooreparkense sp. nov. and Corynebacterium casei sp. nov., isolated from the surface of a smear-ripened cheese. Int. J. Syst. Evol. Microbiol. 51, 843–852.

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1979	Monera	Actinobacteria	Corynebacteriaceae	Corynebacterium	Corynebacterium flavescens	Dairy	Brennan, N.M., Ward, A.C., Beresford, T.P., Fox, P.F., Goodfellow, M., Cogan, T.M., 2002. Biodiversity of the Bacterial Flora on the Surface of a Smear Cheese Appl. Environ. Microbiol. 68, 820-830.		Y	ATCC 10340	Barksdale, L., Lanéelle, M.A., Pollice, M.C., Asselineau, J., Welby, M., Norgard, M.V., 1979. Biological and chemical basis for the reclassification of Microbacterium flavum Orla-Jensen as Corynebacterium flavescens nom. nov. Int. J. Syst. Bacteriol. 29, 222–233.
1961	Monera	Actinobacteria	Corynebacteriaceae	Corynebacterium	Corynebacterium variabile	Dairy	Bockelmann, W., Willems, K.P., Neve, H., Heller, K.H., 2005. Cultures for the ripening of smear cheeses. International Dairy Journal 15, 719-732.			ATCC 15753	Gelsomino, R., Vancanneyt, M., Snauwaert, C., Vandemeulebroecke, K., Hoste, B., Cogan, T.M., Swings, J., 2005. Corynebacterium mooreparkense, a later heterotypic synonym of Corynebacterium variabile. Int. J. Syst. Evol. Microbiol. 55, 1129-1131.
1996	Monera	Actinobacteria	Dermabacteraceae	Brachybacterium	Brachybacterium alimentarium	Dairy	Schubert, K., Ludwig, W., Springer, N., Kroppenstedt, R.M., Accolas, J.P., Fiedler, F., 1996. Two coryneform bacteria isolated from the surface of French Gruyère and Beaufort cheeses of the genus brachybacterium: Brachybacterium alimentarium sp. nov. and Bracybacterium tyrofermentans sp. nov. Int J Syst Bacteriol. 46, 81-7.			ATCC 700067	Schubert, K., Ludwig, W., Springer, N., Kroppenstedt, R.M., Accolas, J.P., Fiedler, F., 1996. Two coryneform bacteria isolated from the surface of French Gruyère and Beaufort cheeses of the genus brachybacterium: Brachybacterium alimentarium sp. nov. and Bracybacterium tyrofermentans sp. nov. Int J Syst Bacteriol. 46, 81-7.
1996	Monera	Actinobacteria	Dermabacteraceae	Brachybacterium	Brachybacterium tyrofermentans	Dairy	Schubert, K., Ludwig, W., Springer, N., Kroppenstedt, R.M., Accolas, J.P., Fiedler, F., 1996. Two coryneform bacteria isolated from the surface of French Gruyère and Beaufort cheeses of the genus brachybacterium: Brachybacterium alimentarium sp. nov. and Bracybacterium tyrofermentans sp. nov. Int J Syst Bacteriol. 46, 81-7.			ATCC 700068	Schubert, K., Ludwig, W., Springer, N., Kroppenstedt, R.M., Accolas, J.P., Fiedler, F., 1996. Two coryneform bacteria isolated from the surface of French Gruyère and Beaufort cheeses of the genus brachybacterium: Brachybacterium alimentarium sp. nov. and Bracybacterium tyrofermentans sp. nov. Int J Syst Bacteriol. 46, 81-7.
2001	Monera	Actinobacteria	Microbacteriaceae	Microbacterium	Microbacterium gubbeenense	Dairy	Bockelmann, W., Willems, K.P., Neve, H., Heller, K.H., 2005. Cultures for the ripening of smear cheeses. International Dairy Journal 15, 719-732.			LMG S-19263	Brennan, N.M., Brown, R., Goodfellow, M., Ward, A.C., Beresford, T.P., Vancanneyt, M., Cogan, T.M., Fox, P.F., 2001. Microbacterium gubbeenense sp. nov., from the surface of a smear-ripened cheese. International Journal of Systematic and Evolutionary Microbiology 51, 1969-1976.
2005	Monera	Actinobacteria	Micrococcaceae	Arthrobacter	Arthrobacter arilaitensis	Dairy	Mounier, J., Gelsomino, R., Goerges, S., Vancanneyt, M., Vandemeulebroecke, K., Hoste, B., Scherer, S., Swings, J., Fitzgerald, G.F., Cogan, T.M., 2005. Surface microflora of four smear-ripened cheeses. Appl Environ Microbiol. 71, 6489-500.			DSM 16368	Irlinger, F., Bimet, F., Delettre, J., Lefevre, M., Grimont, P.A.D., 2005. Arthrobacter bergerei sp. nov. and Arthrobacter arilaitensis sp. nov., novel coryneform species isolated from the surfaces of cheeses. Int. J. Syst. Evol. Microbiol. 55, 457-462.
2005	Monera	Actinobacteria	Micrococcaceae	Arthrobacter	Arthrobacter bergerei	Dairy	Irlinger, F., Bimet, F., Delettre, J., Lefevre, M., Grimont, P.A.D., 2005. Arthrobacter bergerei sp. nov. and Arthrobacter arilaitensis sp. nov., novel coryneform species isolated from the surfaces of cheeses. Int. J. Syst. Evol. Microbiol. 55, 457-462.			DSM 16367	Irlinger, F., Bimet, F., Delettre, J., Lefevre, M., Grimont, P.A.D., 2005. Arthrobacter bergerei sp. nov. and Arthrobacter arilaitensis sp. nov., novel coryneform species isolated from the surfaces of cheeses. Int. J. Syst. Evol. Microbiol. 55, 457-462.
1928	Monera	Actinobacteria	Micrococcaceae	Arthrobacter	Arthrobacter globiformis	Dairy	Fox, P.F., 2000. Fundamentals of cheese science. Springer.		Y	ATCC 8010	Conn, H.J., 1928. A type of bacteria abundant in productive soils, but apparently lacking in certain soils of low productivity. New York State Agricultural Experimental Station Technical Bulletin No. 138:3–26.
1959	Monera	Actinobacteria	Micrococcaceae	Arthrobacter	Arthrobacter nicotianae	Dairy	Smacchi, E., Gobbetti, M.,Lanciotti, R., Fox, P.F., 1999. EMS Microbiol Lett. 1999 Sep 1;178(1):191-7. Purification and characterization of an extracellular proline imin eptidase from Arthrobana, 58. Smacchi, E., Fox, P.F., Gobbetti, M. 1999. Purification and characterization of two extracellular proteinases from Arthrobacter nicotianae 9458. FEMS Microbiol Lett. 170, 327-33.			ATCC 14929	Giovanozzi-Sermanni, G., 1959. Una nuova specie di Arthrobacter determinante la degradazione della nicotina: Arthrobacter nicotianae. Il Tabacco. 63:83–86.
1999	Monera	Actinobacteria	Micrococcaceae	Kocuria	Kocuria rhizophila	Dairy, Meat	El-Baradei, G., Delacroix-Buchet, A., Ogier, J.C., 2007. Biodiversity of bacterial ecosystems in traditional Egyptian Domiati cheese. Appl Environ Microbiol. 73, 1248-55. Danish list of notified cultures (08/2010)			DSM 11926T	Kovács, G., Burghardt, J., Pradella, S., Schumann, P., Stackebrandt, E., Màrialigeti, K., 1999. Kocuria palustris sp. nov. and Kocuria rhizophila sp. nov., isolated from the rhizoplane of the narrow-leaved cattail (Typha angustifolia). Int J Syst Bacteriol. 49, 167-73.

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1900	Monera	Actinobacteria	Micrococcaceae	Kocuria	Kocuria varians	Dairy, Meat	O'Mahony, T., Rekhif, N., Cavadini, C., Fitzgerald, G.F., 2001. The application of a fermented food ingredient containing 'variacin', a novel antimicrobial produced by Kocuria varians, to control the growth of Bacillus cereus in chilled dairy products. J Appl Microbiol. 90, 106-14.		Y	DSM 20033	Stackebrandt, E., Koch, C., Gvozdiak, O., Schumann, P., 1995. Taxonomic dissection of the genus Micrococcus: Kocuria gen. nov., Nesterenkonia gen. nov., Kytococcus gen. nov., Dermacoccus gen. nov., and Micrococcus Cohn 1872 gen. emend. Int. J. Syst. Bacteriol. 45, 682-692. ex Micrococcus varians Migula 1900 (Approved Lists 1980)
1872	Monera	Actinobacteria	Micrococcaceae	Micrococcus	Micrococcus luteus	Dairy	Bonnarme, P., Lapadatescu, C., Yvon, M., Spinnler, H.E., L-methionine degradation potentialities of cheese-ripening microorganisms. J Dairy Res. 68, 663-74.			ATCC 4698	Wieser, M., Denner, E.B.M., Kampfer, P., Schumann, P., Tindall, B., Steiner, U., Vybiral, D., Lubitz, W., Maszenan, A.M., Patel, B.K.C., Seviour, R.J., Radax, C., Busse, H.J., 2002. Emended descriptions of the genus Micrococcus, Micrococcus luteus (Cohn 1872) and Micrococcus lylae (Kloos et al. 1974). Int. J. Syst. Evol. Microbiol.52, 629-637. Micrococcus luteus (Schroeter 1872) Cohn 1872 (Approved Lists 1980)
1974	Monera	Actinobacteria	Micrococcaceae	Micrococcus	Micrococcus lylae	Meat	García Fontán, M.C., 2007. Microbiological characteristics of "androlla", a Spanish traditional pork sausage. Food Microbiol. 24, 52-8.			ATCC 27566	Wieser, M., Denner, E.B.M., Kampfer, P., Schumann, P., Tindall, B., Steiner, U., Vybiral, D., Lubitz, W., Maszenan, A.M., Patel, B.K.C., Seviour, R.J., Radax, C., Busse, H.J., 2002. Emended descriptions of the genus Micrococcus, Micrococcus luteus (Cohn 1872) and Micrococcus lylae (Kloos et al. 1974). Int. J. Syst. Evol. Microbiol.52, 629-637. Micrococcus lylae Kloos et al. 1974 (Approved Lists 1980)
1909	Monera	Actinobacteria	Propionibacteriaceae	Propionibacterium	Propionibacterium acidipropionici	Dairy	Sherman, J.M., 1921. The cause of eyes and characteristic flavor of Emmental cheese. J. Bact. 6, 379-392.	Y		ATCC 25562	Orla-Jensen, S., 1909. Die Hauptlinien des natürlichen Bakteriensystems. Zb. Bakteriol., Abt. 2 22, 305-346.
1928	Monera	Actinobacteria	Propionibacteriaceae	Propionibacterium	Propionibacterium freudenreichii subsp.freudenreichii	Dairy	Van Niel, 1928. The genus Propionibacterium. J.W. Boisevain, Haarlem, the Netherlands.	Y		ATCC 6207	Moore, W.E.C., Holdeman, L.V., 1974. Propionibacterium. In: Buchanan, R.E., Gibbons, N.E. (Eds.), Bergey's Manual of Determinative Bacteriology, 8th ed. Williams & Wilkins. Baltimore, MD. 633–644.
1928	Monera	Actinobacteria	Propionibacteriaceae	Propionibacterium	Propionibacterium freudenreichii subsp.shermanii	Dairy	Van Niel, 1928. The genus Propionibacterium. J.W. Boisevain, Haarlem, the Netherlands.	Y		ATCC 9614	Moore, W.E.C., Holdeman, L.V., 1974. Propionibacterium. In: Buchanan, R.E., Gibbons, N.E. (Eds.), Bergey's Manual of Determinative Bacteriology, 8th ed. Williams & Wilkins. Baltimore, MD. 633–644.
1928	Monera	Actinobacteria	Propionibacteriaceae	Propionibacterium	Propionibacterium jensenii	Dairy	Van Niel, 1928. The genus Propionibacterium. J.W. Boisevain, Haarlem, the Netherlands.			DSM 20535	Britz, T.J., Riedel, K.H., 1994. Propionibacterium species diversity in Leerdammer cheese. Int J Food Microbiol. 22, 257-67.
1928	Monera	Actinobacteria	Propionibacteriaceae	Propionibacterium	Propionibacterium thoenii	Dairy	Van Niel, 1928. The genus Propionibacterium. J.W. Boisevain, Haarlem, the Netherlands.			NCFB568	Britz, T.J., Riedel, K-H.J., 1991. A numerical taxonomic study of Propionibacterium strains from dairy sources. Journal of Applied Microbiology 71, 407–416.
1914	Monera	Actinobacteria	Streptomycetaceae	Streptomyces	Streptomyces griseus subsp. griseus	Meat	Hammes, W.P., Knauf, H.J., 1994. Starter in the processing of meat products. Meat Science 36, 155-168. Candogan, K., Wardlaw, F.B., Acton, J.C., 2009. Effect of starter cultures on proteolytic changes during processing. Food Chemistry 116, 731-737.		Y	ATCC 23345	Waksman, S.A., Henrici, A.T., 1943. The nomenclature and classification of the actinomycetes. J. Bacteriol. 46, 337–341.
1987	Monera	Firmicutes	Bacillaceae	Bacillus	Bacillus amyloliquefaciens	Fish	Zaman MZ, 2011. Novel starter cultures to inhibit biogenic amines accumulation during fish sauce fermentation. Int J Food Microbiol 145(1):84-91.			ATCC 23350	Priest, F.G., Goodfellow, M., Shute, L.A., Berkeley, R.C.W., 1987. Bacillus amyloliquefaciens sp. nov., nom. Rev. Int J Syst Bacteriol 37, 69-71
1915	Monera	Firmicutes	Bacillaceae	Bacillus	Bacillus coagulans	Cocoa	Schwan, R.F., Vanetti, M.C.D., Silva, D.O., Lopez, A., de Moraes, C.A., 1986. Characterization and distribution of aerobic, spore-forming bacteria from cacao fermentations in Bahia. J. Food Sci. 51:1583–1584.			ATCC 7050	HAMMER, B.W., 1915. Bacteriological studies on the coagulation of evaporated milk. Iowa Agr. Expt. Sta., Res. Bull. 19.
1970	Monera	Firmicutes	Bacillaceae	Bacillus	Bacillus subtilis	Soy	Nagami, Y., Tanaka, T., 1986. Molecular cloning and nucleotide sequence of a DNA fragment from Bacillus natto that enhances production of extracellular proteases and levansucrase in Bacillus subtilis. J Bacteriol. 166, 20-8. Wang, J., Fung, D.Y., 1996. Alkaline-fermented foods: a review with emphasis on pidan fermentation. Crit Rev Microbiol. 22, 101-38.	Y	Y	ATCC 6051	Gibson, T., Gordon, R., 1974. Endospore-forming rods and cocci. Family I. Bacillacea, genus I. Bacillus Cohn, p. 529-550. In: Buchanan, R.E., Gibsons, N.E. (Eds.), Bergey's manual of determinative bacteriology, 8th ed. The Williams & Wilkins Co., Baltimore.

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1987	Monera	Firmicutes	Carnobacteriaceae	Carnobacterium	Carnobacterium divergens	Dairy, Meat, Fish	Hammes, W.P., Hertel, C., 2009. "Carnobacterium". In: De Vos, P., Schleifer, K-H., Ludwig, W., Whitman, W.B., Garrity, G., Jones, D., Rainey, F., Krieg, N.R. (Eds.), Bergey's Manual of Systematic Bacteriology, Volume 3, The Firmicutes; p.p. 549 - 557, Springer			ATCC 35677	Collins, M.D., Farrow, J.A.E., Phillips, B.A., Feresu, S., Jones, D., 1987. Classification of Lactobacillus divergens, Lactobacillus piscicola, and some catalase-negative, asporogenous, rod-shaped bacteria from poultry in a new genus, Carnobacterium. Int. J. Syst. Bacteriol. 37, 310-316.
2003	Monera	Firmicutes	Carnobacteriaceae	Carnobacterium	Carnobacterium maltaromaticum	Dairy, Meat	Afzal, M.I., Jacquet, T., Delaunay, S., Borges, F., Millière, J.B., Revol-Junelles, A.M., Cailliez-Grimal, C., 2010. Carnobacterium maltaromaticum: identification, isolation tools, ecology and technological aspects in dairy products. Food Microbiol. 27, 573-9.			ATCC 27865	Mora, D., Scarpellini, M., Franzetti, L., Colombo, S., Galli, A., 2003. Reclassification of Lactobacillus maltaromicus (Miller et al. 1974) DSM 20342T and DSM 20344 and Carnobacterium piscicola (Collins et al. 1987) DSM 20730T and DSM 20722 as Carnobacterium maltaromaticum comb. nov. Int. J. Syst. Evol. Microbiol. 53, 675-678.
1987	Monera	Firmicutes	Carnobacteriaceae	Carnobacterium	Carnobacterium piscicola	Meat	Schillinger, U., Lücke, F.-K., 1987. Identification of lactobacilli from meat and meat products. Food Microbiol. 4, 199–208.			ATCC 35586	Collins, M.D., Farrow, J.A.E., Philips, B.A., Ferusu, S., Jones, D., 1987. Classification of Lactobacillus divergens, Lactobacillus pisciola, and some catalase-negative, asporogenous, rod-shaped bacteria from poultry in a new genus, Carnobacterium. Int. J. Syst. Bacteriol. 37, 310–316.
1982	Monera	Firmicutes	Enterococcaceae	Enterococcus	Enterococcus durans	Dairy, Sourdough	Miguel Rocha, J., Xavier Malcata, F., 1999. On the Microbiological Profile of Traditional Portuguese Sourdough. Journal of Food Protection 62, 1416–1429. De Angelis, M., 2008. Selection and use of autochthonous multiple strain cultures for the manufacture of high-moisture traditional Mozzarella cheese. International Journal of Food Microbiology 125, 123–132.			ATCC 19432	Sherman, J.M., Wing, H.U., 1937 Streptococcus durans N. Sp. Jour. Dairy Sci. 20, 165-167.
1964	Monera	Firmicutes	Enterococcaceae	Enterococcus	Enterococcus faecalis	Dairy, Meat, Soy, Vegetables	Foulquie´ Moreno, M.R., Sarantinopoulos, P., Tsakalidou, E., Vuyst, L. De., 2006. The role and application of enterococci in food and health. International Journal of Food Microbiology 106, 1-24.			ATCC 19433	Schleifer, K.H., Kilpper-Balz, R., 1984. Transfer of Streptococcus faecalis and Streptococcus faecium to the genus Enterococcus nom. rev. as Enterococcus faecalis comb. nov. and Enterococcus faecium comb. nov. Int. J. Syst. Bacteriol. 34, 31-34.
1980	Monera	Firmicutes	Enterococcaceae	Enterococcus	Enterococcus faecium	Dairy, Meat, Soy, Vegetables	Foulquie´ Moreno, M.R., Sarantinopoulos, P., Tsakalidou, E., Vuyst, L. De., 2006. The role and application of enterococci in food and health. International Journal of Food Microbiology 106, 1-24.		Y	ATCC 19434	Orla-Jensen, S., 1924. La classification des bactéries lactiques. Lait 4, 468–474.
1934	Monera	Firmicutes	Enterococcaceae	Tetragenococcus	Tetragenococcus halophilus	Soy	Noda, F., Hayashi, K., Mizunuma, T., 1980. Antagonism Between Osmophilic Lactic Acid Bacteria and Yeasts in Brine Fermentation of Soy Sauce. Appl Environ Microbiol. 40, 452-457. Nishimura, I., Igarashi, T., Enomoto, T., Dake, Y., Okuno, Y., Obata, A., 2009. Clinical efficacy of halophilic lactic acid bacterium Tetragenococcus halophilus Th221 from soy sauce moromi for perennial allergic rhinitis. Allergol Int. 58:179-85.			ATCC 33315	Anon., 1994. Validation of the Publication of New Names and New Combinations Previously Effectively Published Outside the IJSB List No. 49. Int. J. Syst. Bacteriol. 44: 370 - 371 Collins, M.D., Williams, A.M., Wallbanks, S., 1990. The phylogeny of Aerococcus and Pediococcus as determined by 16S rRNA sequence analysis: description of Tetragenococcus gen. nov. FEMS Microbiol Lett. 58, 255-62.
2005	Monera	Firmicutes	Enterococcaceae	Tetragenococcus	Tetragenococcus koreensis	Vegetables	Lee, M., Kim, M.K., Vancanneyt, M., Swings, J. Kim, S.H., Kang,. M.S., Lee, S.T., 2005. Tetragenococcus koreensis sp. nov., a novel rhamnolipid-producing bacterium. Int. J. Syst. Evol. Microbiol. 55, 1409-1413.			DSM 16501	Lee, M., Kim, M.K., Vancanneyt, M., Swings, J. Kim, S.H., Kang,. M.S., Lee, S.T., 2005. Tetragenococcus koreensis sp. nov., a novel rhamnolipid-producing bacterium. Int. J. Syst. Evol. Microbiol. 55, 1409-1413.
1986	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus acetotolerans	Vegetables	Arici, M., Coskun, F., 2001. Hardaliye: Fermented grape juice as a traditional Turkish beverage. Food Microbiology 18, 417–421.			ATCC 43578	Entani, E., Masai, H., Suzuki, K-I., 1986. Lactobacillus acetotolerans, a New Species from Fermented Vinegar Broth. International Journal of Systematic and Evolutionary Microbiology 36, 544-549.
2005	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus acidifarinae	Sourdough	Vancanneyt. M., Neysens, P., De Wachter, M., Engelbeen, K., Snauwaert, C., Cleenwerck, I., Van der Meulen, R., Hoste, B., Tsakalidou, E., De Vuyst, L., Swings, J., 2005. Lactobacillus acidifarinae sp. nov. and Lactobacillus zymae sp. nov., from wheat sourdoughs. Int J Syst Evol Microbiol. 55, 615-620.			LMG 2200	Vancanneyt. M., Neysens, P., De Wachter, M., Engelbeen, K., Snauwaert, C., Cleenwerck, I., Van der Meulen, R., Hoste, B., Tsakalidou, E., De Vuyst, L., Swings, J., 2005. Lactobacillus acidifarinae sp. nov. and Lactobacillus zymae sp. nov., from wheat sourdoughs. Int J Syst Evol Microbiol. 55, 615-620.

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2000	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus acidipiscis	Dairy, Fish	Asteri, I.A., Robertson, N., Kagkli, D.M., Andrewes, P., Nychas, G., Coolbear, T., Holland, R., Crow, V., Tsakalidou. E., 2009. Technological and flavour potential of cultures isolated from traditional Greek cheeses – A pool of novel species and starters. International Dairy Journal 19, 595-604. Fontana, C., Cappa, F., Rebecchi, A., Cocconcelli, P.S. 2010. Surface microbiota analysis of Taleggio, Gorgonzola, Casera, Scimudin and Formaggio di Fossa Italian cheeses. International Journal of Food Microbiology 138, 205-21.			CIP 106750	Tanasupawat, S., Shida, O., Okada, S., Komagata, K., 2000. Lactobacillus acidipiscis sp. nov. and Weissella thailandensis sp. nov., isolated from fermented fish in Thailand. International Journal of Systematic and Evolutionary Microbiology 50, 1479-85.
1950	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus acidophilus	Dairy, Vegetables	Weiss, N., Busse, M., Kandler, O., 1968. [The origin of fermentation by-products in the lactic acid fermentation of Lactobacillus acidophilus]. Arch Mikrobiol. 62, 85-93. Baroudi, A.A., Collins, E.B., 1976. Microorganisms and characteristics of laban. J Dairy Sci. 59, 200-2.	Y	Y	ATCC 700396	Johnson, J.L., Phelps, C.F., Cummins, C.S., London, J., Gasser, F., 1980. Taxonomy of the Lactobacillus acidophilus Group. International Journal of Systematic and Evolutionary Microbiology 30, 53-68.
1983	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus alimentarius	Meat, Fish	García Fontán, M.C., 2007. Microbiological characteristics of "androlla", a Spanish traditional pork sausage. Food Microbiol. 24, 52-8.	Y	Y	ATCC 29643	Reuter, G., 1983. Lactobacillus alimentarius sp. nov., nom. rev. and Lactobacillus farciminis sp. nov., nom. rev. Syst. Appl. Microbiol. 4, 277–279.
1998	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus amylolyticus	Sourdough	Pedersen, C., 2004. Microbiological characterization of wet wheat distillers' grain, with focus on isolation of lactobacilli with potential as probiotics. Appl Environ Microbiol. 70, 1522-7.	Y		DSM 11664	Bohak, I., Back, W., Richter, L., Ehrmann, M., Ludwig, W., Schleifer, K.H., 1998. Lactobacillus amylolyticus sp. nov., isolated from beer malt and beer wort. Syst. Appl. Microbiol. 21, 360-364.
1994	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus amylovorus	Sourdough	Fitzsimons, A. 1994. Development of an amylolytic Lactobacillus plantarum silage strain expressing the Lactobacillus amylovorus alpha-amylase gene. Appl Environ Microbiol. 60, 3529-35.	Y		ATCC 33620	Nakamura, L. K. 1981. Lactobacillus amylovorus, a new starch-hydrolyzing species from cattle waste-corn fermentations. Int. J. Syst. Bacteriol. 31:56–63.
1980	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus brevis	Dairy, Vegetables	Pedersen, C.S., Niketic, G., Albury, M.N., 1962. Fermentation of the Yugoslavian pickled cabbage. Appl Microbiol. 10, 86-9.	Y	Y	ATCC 14869	Bergey, D.H., Breed, R.S. Hammer, B.W., Huntoon, F.M., Murray, E.G., Harrison, F.C., 1934. Bergey's Manual of Determinative Bacteriology, 4th ed. Williams and Wilkins. Baltimore, MD.
1987	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus buchneri	Wine, Sourdough	Poittevin de De Cores, 1966. [Study on malolactic fermentation of wines in Uruguay. V. Study of the metabolism of Lactobacillus plantarum (pentosus and arabinosus) and of Lactobacillus buchneri isolated from wines and their enologic uic use] [Article in Spanish] Rev Latinoam Microbiol Parasitol (Mex) 8, 33-7.	Y		ATCC 4005	Bergey, D.H., Harrison, F.C., Breed, R.S., Hammer, B.W., Huntoon, F.M., 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. Williams and Wilkins. Baltimore, MD.
2009	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus cacaonum	Cocoa	De Bruyne, K., Camu, N., De Vuyst, L., Vandamme, P., 2009. Lactobacillus fabifermentans sp. nov. and Lactobacillus cacaonum sp. nov., isolated from Ghanaian cocoa fermentations. Int. J. Syst. Evol. Microbiol. 59, 7-12.			DSM 21116	De Bruyne, K., Camu, N., De Vuyst, L., Vandamme, P., 2009. Lactobacillus fabifermentans sp. nov. and Lactobacillus cacaonum sp. nov., isolated from Ghanaian cocoa fermentations. Int. J. Syst. Evol. Microbiol. 59, 7-12.
1970	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus casei subsp. casei	Dairy	Branen, A.L., Keenan, T.W., 1971. Diacetyl and acetoin production by Lactobacillus casei. Appl Microbiol. 22, 517-21.	Y	Y	ATCC 393	Hansen, P.A., Lessel, E.F., 1971. Lactobacillus casei (Orla-Jensen) comb. nov. Int. Syst. Bacteriol. 21, 69–71.
1972	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus collinoides	Fruits	Carr, J.G., Davies, P.A., 1972. The ecology and classification of strains of Lactobacillus collinoides nov. spec.: A bacterium commonly found in fermenting apple juice. Journal of Applied Bacteriology 35, 463-471.	Y		ATCC 27612	Carr, J.G., Davies, P.A., 1972. The ecology and classification of strains of Lactobacillus collinoides nov. spec.: A bacterium commonly found in fermenting apple juice. Journal of Applied Bacteriology 35, 463-471.
2007	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus composti	Beverages	Endo, A., Okada, S., 2007. Lactobacillus composti sp. nov., a lactic acid bacterium isolated from a compost of distilled shochu residue. Int. J. Syst. Evol. Microbiol., 57, 870-872. NRIC 0689			NRIC 0689	Endo, A., Okada, S., 2007. Lactobacillus composti sp. nov., a lactic acid bacterium isolated from a compost of distilled shochu residue. Int. J. Syst. Evol. Microbiol. 57, 870-872. NRIC 0689
1988	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus coryniformis subsp. coryniformis	Dairy	Hegazi, F.Z., Abo-Elnaga, I.G., 1980. Characters of Lactobacillus coryniformis, isolated from an Iraqi cheese. Zentralbl Bakteriol Naturwiss. 135, 205-11.	Y		ATCC 25602	Abo-Elnaga, I.G., Kandler, O., 1965. Zur Taxonomie der Gattung Lactobacillus Beijerinck. I. Das Subgenus Streptobacterium Orla-Jensen. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II 119, 1-36.

Documented	Kingdom	Phylum	Family	Genus	Taxonomy	Food Usage	Reference Food Usage	QPS	Danish List	Type Strain	Reference Taxonomy
1988	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus crispatus	Sourdough	Ehrmann, M.A., Vogel, R.F., 2005. Molecular taxonomy and genetics of sourdough lactic acid bacteria Trends in Food Science & Technology 16, 31-42.	Y		ATCC 33820	Moore, W.E.C., Holdeman, L.V., 1970. Propionibacterium, Arachnia, Actinomyces, Lactobacillus and Bifidobacterium. In: Cato, E.P., Cummins, C.S., Holdeman, L.V., Johnson, J.L., Moore, W.E.C., Smibert, R.M., Smith, L.D.S. (Eds), Outline of Clinical Methods in Anaerobic Bacteriology, 2nd revision, Virginia Polytechnic Institute, Anaerobe Laboratory, Blacksburg, Virginia, 1970, pp. 15-22.
2007	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus crustorum	Sourdough	Ravyts F, De Vuyst L., 2011. Prevalence and impact of single-strain starter cultures of lactic acid bacteria on metabolite formation in sourdough. Food Microbiol 28(6):1129-39.			LMG 23699	Scheirlinck, I., Van der Meulen, R., Van Schoor, A., Huys, G., Vandamme, P., De Vuyst, L., Vancanneyt, M., 2007. Lactobacillus crustorum sp. nov., isolated from two traditional Belgian wheat sourdoughs. Int J Syst Evol Microbiol. 57(Pt 7):1461-7.
1993	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus curvatus subps. curvatus	Meat	García Fontán, M.C., 2007. Microbiological characteristics of "androlla", a Spanish traditional pork sausage. Food Microbiol. 24, 52-8.	Y	Y	ATCC 25601	Abo-Elnaga, I.G., Kandler, O., 1965. Zur Taxonomie der Gattung Lactobacillus Beijerinck. I. Das Subgenus Streptobacterium Orla-Jensen. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II 119, 1-36.
1930	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus delbrueckii subsp. bulgaricus	Dairy	Shahani, K.M., Chandan, R.C., 1979. Nutritional and healthful aspects of cultured and culture-containing dairy foods. J Dairy Sci. 62, 1685-94.	Y	Y	ATCC 11842	Weiss, N., Schillinger, U., Kandler, O., 1983. Lactobacillus lactis, Lactobacillus leichmannii and Lactobacillus bulgaricus, subjective synonyms of Lactobacillus delbrueckii, and description of Lactobacillus delbrueckii subsp. lactis comb. nov. and Lactobacillus delbrueckii subsp. bulgaricus comb. nov. Syst. Appl. Microbiol. 4, 552–557.
1960	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus delbrueckii subsp. delbrueckii	Dairy, Vegetables	Etchells, J.L., 1964. Pure Culture Fermentation of Brined Cucumbers. Appl Microbiol. 12, 523-35.	Y	Y	ATCC 11842	Beijerinck, M.W. 1901. Anhäufungsversuche mit Ureumbakterien: Ureumspaltung durch Urease und durch Katabolismus. Zentralbl. Bakteriol. Parasitenkde. Infektionskrankh. Hyg. Abt. 2 7, 33–61.
1949	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus delbrueckii subsp. lactis	Dairy	Lazos, E.S., 1993. The fermentation of trahanas: a milk-wheat flour combination. Plant Foods Hum Nutr. 44, 45-62.	Y	Y	ATCC 12315	Weiss, N., Schillinger, U., Kandler, O., 1983. Lactobacillus lactis, Lactobacillus leichmannii and Lactobacillus bulgaricus, subjective synonyms of Lactobacillus delbrueckii, and description of Lactobacillus delbrueckii subsp. lactis comb. nov. and Lactobacillus delbrueckii subsp. bulgaricus comb. nov. Syst. Appl. Microbiol. 4, 552–557.
1961	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus dextrinicus	Meat	Deibel, R.H., 1961. Microbiology of meat curing. IV. A lyophilized Pediococcus cerevisiae starter culture for fermented sausage. Appl Microbiol. 9, 239-43.	Y		ATCC 33087	Haakensen, M., 2009. Reclassification of Pediococcus dextrinicus (Coster and White 1964) back 1978 (Approved Lists 1980) as Lactobacillus dextrinicus comb. nov., and emended description of the genus Lactobacillus. Int J Syst Evol Microbiol. 59(Pt 3), 615-21.
2002	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus diolivorans	Cereals	Krooneman, J., Faber, F., Alderkamp, A.C., Oude Elferink, S.J.H.W., Driehuis, F., Cleenwerck, I., Swings, J., Gottschal, J.C., Vancanneyt, M., 2002. Lactobacillus diolivorans sp. nov., a 1,2-propanediol-degrading bacterium isolated from aerobically stable maize silage. Int. J. Syst. Evol. Microbiol. 52, 639-646.			DSM 14421	Krooneman, J., Faber, F., Alderkamp, A.C., Oude Elferink, S.J.H.W., Driehuis, F., Cleenwerck, I., Swings, J., Gottschal, J.C., Vancanneyt, M., 2002. Lactobacillus diolivorans sp. nov., a 1,2-propanediol-degrading bacterium isolated from aerobically stable maize silage. Int. J. Syst. Evol. Microbiol. 52, 639-646.
2009	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus fabifermentans	Cocoa	De Bruyne, K., Camu, N., De Vuyst, L., Vandamme, P., 2009. Lactobacillus fabifermentans sp. nov. and Lactobacillus cacaonum sp. nov., isolated from Ghanaian cocoa fermentations. Int. J. Syst. Evol. Microbiol. 59, 7-12.			DSM 21115	De Bruyne, K., Camu, N., De Vuyst, L., Vandamme, P., 2009. Lactobacillus fabifermentans sp. nov. and Lactobacillus cacaonum sp. nov., isolated from Ghanaian cocoa fermentations. Int. J. Syst. Evol. Microbiol. 59, 7-12.
1980	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus farciminis	Soy, Fish	Tanasupawat, S., 2002. Lactic acid bacteria isolated from soy sauce mash in Thailand. J Gen Appl Microbiol. 48, 201-9.	Y	Y	ATCC 29644	Reuter, G. 1983. Lactobacillus alimentarius sp. nov., nom. rev. and Lactobacillus farciminis sp. nov., nom. rev. Syst. Appl. Microbiol. 4, 277–279.
1980	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus fermentum	Sourdough	Khetarpaul, N., Chauhan, B.M., 1991. Biological utilisation of pearl millet flour fermented with yeasts and lactobacilli. Plant Foods Hum Nutr. 41, 309-19.	Y	Y	ATCC 11739	Beijerinck, M.W. 1901. Anhäufungsversuche mit Ureumbakterien: Ureumspaltung durch Urease und durch Katabolismus. Zentralbl. Bakteriol. Parasitenkde. Infektionskrankh. Hyg. Abt. 2 7, 33–61.

Documented	Kingdom	Phylum	Family	Genus	Taxonomy	Food Usage	Reference Food Usage	QPS	Danish List	Type Strain	Reference Taxonomy
1996	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus fructivorans	Beverages	Vogel, R.F., Böcker, G., Stolz, P. Ehrmann, M., Fanta, D., Ludwig, W., Pot, B., Kersters, K., Schleifer, K.H., Hammes, W.P., 1994. Identification of lactobacilli from sourdough and description of Lactobacillus pontis sp. nov. Int. J. Syst. Bacteriol. 44, 223-229.			ATCC 15435	Charlton, D.B., Melson, M.E., Werkman, C.H. 1934. Physiology of Lactobacillus fructivorans sp. nov., isolated from spoiled salad dressing. J. Sci. 9, 1–11.
2000	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus frumenti	Cereals	Müller, M.R.A., Ehrmann, M.A., Vogel, R.F., 2000. Lactobacillus frumenti sp. nov., a new lactic acid bacterium isolated from rye-bran fermentations with a long fermentation period. Int. J. Syst. Evol. Microbiol. 50, 2127-2133.			DSM 13145	Müller, M.R.A., Ehrmann, M.A., Vogel, R.F., 2000. Lactobacillus frumenti sp. nov., a new lactic acid bacterium isolated from rye-bran fermentations with a long fermentation period. Int. J. Syst. Evol. Microbiol. 50, 2127-2133.
1980	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus gasseri	Sourdough	Ehrmann, M.A., Vogel, R.F., 2005. Molecular taxonomy and genetics of sourdough lactic acid bacteria. Trends in Food Science & Technology 16, 31-42.	Y		ATCC 33323	Lauer, E., Kandler, O., 1980. Lactobacillus gasseri sp. nov., a new species of the subgenus Thermobacterium. Zentralbl. Bakteriol. Parasitenkde. Infektionskrankh. Hyg. Abt. 1 Orig. C 1, 75–78.
2007	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus ghanensis	Cocoa	Nielsen, D.S., Schillinger, U., Franz, C.M.A.P., Bresciani, J., Amoa-Awua, W., Holzapfel, W.H., Jakobsen, M., 2007. Lactobacillus ghanensis sp. nov., a motile lactic acid bacterium isolated from Ghanaian cocoa fermentations. Int. J. Syst. Evol. Microbiol. 57, 1468-1472.			DSM 18630	Nielsen, D.S., Schillinger, U., Franz, C.M.A.P., Bresciani, J., Amoa-Awua, W., Holzapfel, W.H., Jakobsen, M., 2007. Lactobacillus ghanensis sp. nov., a motile lactic acid bacterium isolated from Ghanaian cocoa fermentations. Int. J. Syst. Evol. Microbiol. 57, 1468-1472.
2005	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus hammesii	Sourdough	Valcheva, R., Korakli, M., Onno, B., Prévost, H., Ivanova, I., Ehrmann, M.A., Dousset, X., Gänzle, M.G., Vogel, R.F., 2005. Lactobacillus hammesii sp. nov., isolated from French sourdough. Int. J. Syst. Evol. Microbiol. 55, 763-767.			DSM 16381	Valcheva, R., Korakli, M., Onno, B., Prévost, H., Ivanova, I., Ehrmann, M.A., Dousset, X., Gänzle, M.G., Vogel, R.F., 2005. Lactobacillus hammesii sp. nov., isolated from French sourdough. Int. J. Syst. Evol. Microbiol. 55, 763-767.
2005	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus harbinensis	Vegetables	Miyamoto, M., Seto, Y., Hao, D.H., Teshima, T., Sun, Y.B., Kabuki, T., Yao, L.B., Nakajima, H., 2005. Lactobacillus harbinensis sp. nov., consisted of strains isolated from traditional fermented vegetables 'Suan cai' in Harbin, Northeastern China and Lactobacillus perolens DSM 12745. Syst. Appl. Microbiol. 28, 688-694.			DSM 16991	Miyamoto, M., Seto, Y., Hao, D.H., Teshima, T., Sun, Y.B., Kabuki, T., Yao, L.B., Nakajima, H., 2005. Lactobacillus harbinensis sp. nov., consisted of strains isolated from traditional fermented vegetables 'Suan cai' in Harbin, Northeastern China and Lactobacillus perolens DSM 12745. Syst. Appl. Microbiol. 28, 688-694.
1930	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus helveticus	Dairy, Vegetables	Schafner, D.W., Beuchat, L.R., 1986. Fermentation of aqueous plant seed extracts by lactic Acid bacteria. Appl Environ Microbiol. 51, 1072-6.	Y	Y	ATCC 15009	Bergey, D.H., Harrison, F.C., Breed, R.S., Hammer, B.W., Huntoon, F.M., 1925. Bergey's Manual of Determinative Bacteriology, 2nd ed. Williams and Wilkins. Baltimore, MD.
<1995	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus hilgardii	Wine	Douglas, H.C., Cruess, W.V., 1936. Lactobacillus from california wine: Lactobacillus hilgardii. Food Res. 1, 113–119.	Y		ATCC 8290	Douglas, H.C., Cruess, W.V., 1936. Lactobacillus from california wine: Lactobacillus hilgardii. Food Res. 1, 113–119.
1957	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus homohiochii	Beverages, Sourdough	Kitahara, K., Kaneto, T., Goto, O., 1957. Taxonomic studies on the hiochi-bacteria, specific saprophytes of sake. II. Identification and classification of hiochi-bacteria. Journal of General and Applied Microbiology 3, 111-120.			ATCC 15434	Kitahara, K., Kaneto, T., Goto, O., 1957. Taxonomic studies on the hiochi-bacteria, specific saprophytes of sake. II. Identification and classification of hiochi-bacteria. Journal of General and Applied Microbiology 3, 111-120.
2008	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus hordei	Beverages	Rouse, S., Canchaya, C., Van Sinderen, D., 2008. Lactobacillus hordei sp. nov., a bacteriocinogenic strain isolated from malted barley. Int. J. Syst. Evol. Microbiol. 58, 2013-2017.			DSM 19519	Rouse, S., Canchaya, C., Van Sinderen, D., 2008. Lactobacillus hordei sp. nov., a bacteriocinogenic strain isolated from malted barley. Int. J. Syst. Evol. Microbiol. 58, 2013-2017.
1986	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus jensenii	Sourdough	Virtanen, T., 2007. Development of antioxidant activity in milk whey during fermentation with lactic acid bacteria. J Appl Microbiol. 102, 106-15.		Y	ATCC 25258	Gasser, F., Mandel, M., Rogosa, M., 1970. Lactobacillus jensenii sp. nov., a new representative of the subgenus Thermobacterium. J. Gen. Microbiol. 62, 219–222.
1962	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus johnsonii	Sourdough	Ehrmann, M.A., Vogel, R.F., 2005. Molecular taxonomy and genetics of sourdough lactic acid bacteria Trends in Food Science & Technology 16, 31-42.	Y	Y	ATCC 49335	Fujisawa, T., Benno, Y., Yaeshima, T., Mitsuoka, T., 1992. Taxonomic study of the Lactobacillus acidophilus group, with recognition of Lactobacillus gallinarum sp. nov. and Lactobacillus johnsonii sp. nov. and synonymy of Lactobacillus acidophilus group A3 (Johnson et al., 1980) with the type strain of Lactobacillus amylovorus (Nakamura 1981). Int. J. Syst. Bacteriol. 42, 487–491.
1950	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus kefiri	Dairy	Kandler, O., Kunath, P., 1983b. Lactobacillus kefir sp. nov., a component of the microflora of kefir. Syst. Appl. Microbiol. 4, 286–294.	Y		ATCC 35411	Kandler, O., Kunath, P., 1983b. Lactobacillus kefir sp. nov., a component of the microflora of kefir. Syst. Appl. Microbiol. 4, 286–294.
1950	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus kefranofaciens subsp kefiranofaciens	Dairy	Fujisawa, T., Adachi, S., Toba, T., Arihara,K., Mitsuoka, T., 1988. Lactobacillus kefiranofaciens sp. nov. Isolated from kefir grains. Int. J. Syst. Bacteriol. 38, 12–14.	Y		ATCC 43761	Fujisawa, T., Adachi, S., Toba, T., Arihara,K., Mitsuoka, T., 1988. Lactobacillus kefiranofaciens sp. nov. Isolated from kefir grains. Int. J. Syst. Bacteriol. 38, 12–14.

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1950	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus kefranofaciens subsp kefirgranum	Dairy	Takizawa, S., Kojima, S., Tamura, S., Fujinaga, S., Benno, Y., Nakase, T., 1994. Lactobacillus kefirgranum sp. nov. And Lactobacillus parakefir sp. nov., two new species from kefir grains. Int J Syst Bacteriol 44, 435–439.	Y		ATCC 51647	Vancanneyt, M., Mengaud, J., Cleenwerck, I., Vanhonacker, K., Hoste, B., Dawyndt, P., Degivry, M.C., Ringuet, D., Janssens, D., Swings, J., 2004. Reclassification of Lactobacillus kefirgranum Takizawa et al. 1994 as Lactobacillus kefiranofaciens subsp. kefirgranum subsp. nov. and emended description of L. kefiranofaciens Fujisawa et al. 1988. Int. J. Syst. Evol. Microbiol., 54, 551-556.
2000	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus kimchii	Vegetables	Yoon, J.H., Kang, S.S., Mheen, T.I., Ahn, J.S., Lee, H.J., Kim, T.K., Park, C.S., Kho, Y.H., Kang, K.H., Park, Y.H., 2000. Lactobacillus kimchii sp. nov., a new species from kimchi. Int. J. Syst. Evol. Microbiol. 50, 1789-1795.			ATCC BAA-131	Yoon, J.H., Kang, S.S., Mheen, T.I., Ahn, J.S., Lee, H.J., Kim, T.K., Park, C.S., Kho, Y.H., Kang, K.H., Park, Y.H., 2000. Lactobacillus kimchii sp. nov., a new species from kimchi. Int. J. Syst. Evol. Microbiol. 50, 1789-1795.
2009	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus kisonensis	Vegetables	Watanabe, K., Fujimoto, J., Tomii, Y., Sasamoto, M., Makino, H., Kudo., Y., Okada, S., 2009. Lactobacillus kisonensis sp. nov., Lactobacillus otakiensis sp. nov., Lactobacillus rapi sp. nov. and Lactobacillus sunkii sp. nov., heterofermentative species isolated from sunki, a traditional Japanese pickle. Int. J. Syst. Evol. Microbiol. 59, 754-760.			DSM 19906	Watanabe, K., Fujimoto, J., Tomii, Y., Sasamoto, M., Makino, H., Kudo., Y., Okada, S., 2009. Lactobacillus kisonensis sp. nov., Lactobacillus otakiensis sp. nov., Lactobacillus rapi sp. nov. and Lactobacillus sunkii sp. nov., heterofermentative species isolated from sunki, a traditional Japanese pickle. Int. J. Syst. Evol. Microbiol. 59, 754-760.
1970	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus mali	Fruits	Carr, J.G., Davies, P.A., 1970. Homofermentative lactobacilli of ciders including Lactobacillus mali nov. spec. J. Appl. Bacteriol. 33, 768-774.			ATCC 27053	Carr, J.G., Davies, P.A., 1970. Homofermentative lactobacilli of ciders including Lactobacillus mali nov. spec. J. Appl. Bacteriol. 33, 768-774. Kaneuchi, C., Seki, M., Komagata, K., 1988. Taxonomic study of Lactobacillus mali Carr and Davis 1970 and related strains: validation of Lactobacillus mali Carr and Davis 1970 over Lactobacillus yamanashiensis Nonomura 1983., Int. J. Syst. Bacteriol. 38, 269-272.
1998	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus manihotivorans	Sourdough	Morlon-Guyot, J., Guyot, J.P., Pot, B., Jacobe de Haut, I., Raimbault, M., 1998. Lactobacillus manihotivorans sp. nov., a new starch-hydrolysing lactic acid bacterium isolated during cassava sour starch fermentation. Int. J. Syst. Bacteriol. 48, 1101-1109.			DSM 13343	Morlon-Guyot, J., Guyot, J.P., Pot, B., Jacobe de Haut, I., Raimbault, M., 1998. Lactobacillus manihotivorans sp. nov., a new starch-hydrolysing lactic acid bacterium isolated during cassava sour starch fermentation. Int. J. Syst. Bacteriol. 48, 1101-1109.
2003	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus mindensis	Sourdough	Ehrmann, M.A., Müller, M.R.A., Vogel, R.F., 2003, Molecular analysis of sourdough reveals Lactobacillus mindensis sp. nov. Int. J. Syst. Evol. Microbiol. 53, 7-13.			DSM 14500	Ehrmann, M.A., Müller, M.R.A., Vogel, R.F., 2003, Molecular analysis of sourdough reveals Lactobacillus mindensis sp. nov. Int. J. Syst. Evol. Microbiol. 53, 7-13.
2000	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus mucosae	Sourdough	Vieira-Dalodé, G., 2007. Lactic acid bacteria and yeasts associated with gowé production from sorghum in Bénin. J Appl Microbiol. 103, 342-9.	Y		DSM 13345	Roos, S., Karner, F., Axelsson, L., Jonsson, H., 2000. Lactobacillus mucosae sp. nov., a new species with in vitro mucus-binding activity isolated from pig intestine. Int. J. Syst. Evol. Microbiol. 50, 251-258. S32.
2000	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus nagelii	Cocoa	Papalexandratou, Z., Camu, N., Falony, G., de Vuyst, L., 2011. comparison of the bacterial species diversity of spontaneous cocoa bean fermentations carried out at selected farms in Ivory Coast and Brazil. Food Microbiol 28 964-73.			ATCC 700692	Edwards, C.G., Collins, M.D., Lawson, P.A., Rodriguez, A.V., 2000. Lactobacillus nagelii sp. nov., an organism isolated from a partially fermented wine. Int J Syst Evol Microbiol. 50 Pt 2:699-702.
2007	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus namurensis	Sourdough	Scheirlinck, I., Van der Meulen, R., Van Schoor, A., Cleenwerck, I., Huys, G., Vandamme, P., Devuyst, L., Vancanneyt, M., 2007. Lactobacillus namurensis sp. nov., isolated from a traditional Belgian sourdough. Int. J. Syst. Evol. Microbiol. 57, 223-227.			LMG 23582	Scheirlinck, I., Van der Meulen, R., Van Schoor, A., Cleenwerck, I., Huys, G., Vandamme, P., Devuyst, L., Vancanneyt, M., 2007. Lactobacillus namurensis sp. nov., isolated from a traditional Belgian sourdough. Int. J. Syst. Evol. Microbiol. 57, 223-227.
2006	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus nantensis	Sourdough	Valcheva, R., Ferchichi, M.F., Korakli, M., Ivanova, I., Gänzle, M.G., Vogel, R.F., Prévost, H., Onno, B., Dousset, X., 2006. Lactobacillus nantensis sp. nov., isolated from French wheat sourdough. Int. J. Syst. Evol. Microbiol. 56, 587-591.			DSM 19982	Valcheva, R., Ferchichi, M.F., Korakli, M., Ivanova, I., Gänzle, M.G., Vogel, R.F., Prévost, H., Onno, B., Dousset, X., 2006. Lactobacillus nantensis sp. nov., isolated from French wheat sourdough. Int. J. Syst. Evol. Microbiol. 56, 587-591.
2009	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus nodensis	Dairy	Masoud, W., Takamiya, M., Vogensen, F.K., Lillevang, S., Al-Soud, W.A., Sørensen, S.J., Jakobsen, M., 2010. Characterization of bacterial populations in Danish raw milk cheeses made with different starter cultures by denaturating gradient gel electrophoresis (DGGE) and pyrosequencing. International Dairy Journal 21, 142-148.			DSM 19682	Kashiwagi, T., Suzuki, T., Kamakura, T., 2009. Lactobacillus nodensis sp. nov., isolated from rice bran. Int. J. Syst. Evol. Microbiol. 59, 83-86.

Documented	Kingdom	Phylum	Family	Genus	Taxonomy	Food Usage	Reference Food Usage	QPS	Danish List	Type Strain	Reference Taxonomy
2009	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus oeni	Wine	Manes-Lazaro, R., Ferrer, S., Rossello-Mora, R., Pardo, I., 2009. Lactobacillus oeni sp. nov., from wine. Int. J. Syst. Evol. Microbiol. 59, 2010-2014.			DSM 19972	Manes-Lazaro, R., Ferrer, S., Rossello-Mora, R., Pardo, I., 2009. Lactobacillus oeni sp. nov., from wine. Int. J. Syst. Evol. Microbiol. 59, 2010-2014.
2009	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus otakiensis	Vegetables	Watanabe, K., Fujimoto, J., Tomii, Y., Sasamoto, M., Makino, H., Kudo., Y., Okada, S., 2009. Lactobacillus kisonensis sp. nov., Lactobacillus otakiensis sp. nov., Lactobacillus rapi sp. nov. and Lactobacillus sunkii sp. nov., heterofermentative species isolated from sunki, a traditional Japanese pickle. Int. J. Syst. Evol. Microbiol. 59, 754-760.			DSM 19908	Watanabe, K., Fujimoto, J., Tomii, Y., Sasamoto, M., Makino, H., Kudo., Y., Okada, S., 2009. Lactobacillus kisonensis sp. nov., Lactobacillus otakiensis sp. nov., Lactobacillus rapi sp. nov. and Lactobacillus sunkii sp. nov., heterofermentative species isolated from sunki, a traditional Japanese pickle. Int. J. Syst. Evol. Microbiol. 59, 754-760.
1996	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus panis	Sourdough	Wiese, B.J., Strohmar, W., Rainey, F.A., Diekmann, H., 1996. Lactobacillus panis sp. nov., from sourdough with a long fermentation period. Int. J. Syst. Bacteriol. 46, 449-453.	Y		DSM 6035	Wiese, B.J., Strohmar, W., Rainey, F.A., Diekmann, H., 1996. Lactobacillus panis sp. nov., from sourdough with a long fermentation period. Int. J. Syst. Bacteriol. 46, 449-453.
2006	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus parabrevis	Dairy, Vegetables	Pedersen, C.S., Niketic, G., Albury, M.N., 1962. Fermentation of the Yugoslavian pickled cabbage. Appl Microbiol. 10, 86-9.			ATCC 53295	Vancanneyt, M., Naser, S.M., Engelbeen, K., De Wachter, M., Van der Meulen, R., Cleenwerck, I., Hoste, B., De Vuyst, L., Swings, J., 2006. Reclassification of Lactobacillus brevis strains LMG 11494 and LMG 11984 as Lactobacillus parabrevis sp. nov. Int. J. Syst. Evol. Microbiol. 56, 1553-1557.
1988	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus parabuchneri	Sourdough	Farrow, J.A.E., Phillips, B.A., Collins, M.D., 1988. Nucleic acid studies on some heterofermentative lactobacilli: description of Lactobacillus malefermentans sp. nov. and Lactobacillus parabuchneri sp. nov. FEMS Microbiol. Lett. 55, 163-168.			NCIMB 8838	Farrow, J.A.E., Phillips, B.A., Collins, M.D., 1988. Nucleic acid studies on some heterofermentative lactobacilli: description of Lactobacillus malefermentans sp. nov. and Lactobacillus parabuchneri sp. nov. FEMS Microbiol. Lett. 55, 163-168.
1970	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus paracasei subsp. paracasei	Dairy, Meat	Sameshima, T., 1998. Effect of intestinal Lactobacillus starter cultures on the behaviour of Staphylococcus aureus in fermented sausage. Int J Food Microbiol. 41, 1-7.	Y	Y	ATCC 25302	Collins, M.D., Phillips, B.A., Zanoni, P., 1989. Deoxyribonucleic acid homology studies of Lactobacillus casei, Lactobacillus paracasei sp. nov., subsp. paracasei and subsp. tolerans, and Lactobacillus rhamnosus sp. nov., comb. nov. Int. J. Syst. Bacteriol. 39, 105–108.
1994	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus parakefiri	Dairy	Takizawa, S., Kojima, S., Tamura, S., Fujinaga, S., Benno, Y., Nakase, T., 1994. Lactobacillus kefirgranum sp. nov. and Lactobacillus parakefir sp. nov., two new species from kefir grains. Int. J. Syst. Bacteriol. 44, 435–439.			ATCC 51648	Takizawa, S., Kojima, S., Tamura, S., Fujinaga, S., Benno, Y., Nakase, T., 1994. Lactobacillus kefirgranum sp. nov. and Lactobacillus parakefir sp. nov., two new species from kefir grains. Int. J. Syst. Bacteriol. 44, 435–439.
1999	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus paralimentarius	Sourdough	Cai, Y., Okada, H., Mori, H., Benno, Y., Nakase, T., 1999. Lactobacillus paralimentarius sp. nov., isolated from sourdough. Int. J. Syst. Bacteriol. 49, 1451-1455.			JCM 10415	Cai, Y., Okada, H., Mori, H., Benno, Y., Nakase, T., 1999. Lactobacillus paralimentarius sp. nov., isolated from sourdough. Int. J. Syst. Bacteriol. 49, 1451-1455.
1996	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus paraplantarum	Dairy, Vegetables	Manolopoulou, E., 2003. Evolution of microbial populations during traditional Feta cheese manufacture and ripening. Int J Food Microbiol. 82, 153-61.	Y		ATCC 700211	Curk, M.-C., Hubert, J.-C., Bringel, F., 1996. Lactobacillus paraplantarum sp. nov., a new species related to Lactobacillus plantarum. Int. J. Syst. Bacteriol. 46, 595–598.
1921	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus pentosus	Dairy, Fruits, Wine	Poittevin de De Cores, Carrasco, A., 1966. [Study on malolactic fermentation of wines in Uruguay. V. Study of the metabolism of Lactobacillus plantarum (pentosus and arabinosus) and of Lactobacillus buchneri isolated from wines and their enologic uic use]. Rev Latinoam Microbiol Parasitol (Mex) 8, 33-7.	Y	Y	ATCC 8041	Zanoni, P.J., Farrow, A.E., Phillips, B.A., Collins, M.D., 1987. Lactobacillus pentosus (Fred, Peterson, and Anderson) sp. nov., nom. rev. Int. J. Syst. Bacteriol. 37, 339–341.
1999	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus perolens	Dairy, Vegetables	Ongol, M.P., 2009. Main microorganisms involved in the fermentation of Ugandan ghee. Int J Food Microbiol. 133, 286-91. Miyamoto, M., 2005. Lactobacillus harbinensis sp. nov., consisted of strains isolated from traditional fermented vegetables 'Suan cai' in Harbin, Northeastern China and Lactobacillus perolens DSM 12745. Syst Appl Microbiol. 28, 688-94. Henri-Dubernet, S., 2008. Diversity and dynamics of lactobacilli populations during ripening of RDO Camembert cheese. Can J Microbiol. 54, 218-228.			DSM 12744	Back, W., Bohak, I., Ehrmann, M., Ludwig, W., Pot, B., Kersers, K., Schleifer, K.H., 1999. Lactobacillus perolens sp. nov., a soft drink spoilage bacterium. Syst. Appl. Microbiol. 22, 354-359. DSM 12744.
1965	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus plantarum subsp. plantarum	Dairy, Meat, Vegetables	Orillo, C.A., Pederson, C.S., 1968. Lactic acid bacterial fermentation of burong dalag. Appl Microbiol. 16, 1669-71.	Y	Y	ATCC 14917	Bergey, D.H., Harrison, F.C., Breed, R.S., Hammer, B.W., Huntoon, F.M., 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. Williams and Wilkins. Baltimore, MD.

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2010	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus pobuzihii	Vegetables	Chen, Y.S., Miyashita, M., Suzuki, K., Sato, H., Hsu, J.S., Yanagida, F., 2010. Lactobacillus pobuzihii sp. nov., isolated from pobuzihi (fermented cummingcordia). Int. J. Syst. Evol. Microbiol. 60, 1914-1917.			NBRC 103219	Chen, Y.S., Miyashita, M., Suzuki, K., Sato, H., Hsu, J.S., Yanagida, F., 2010. Lactobacillus pobuzihii sp. nov., isolated from pobuzihi (fermented cummingcordia). Int. J. Syst. Evol. Microbiol. 60, 1914-1917.
1994	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus pontis	Sourdough	Vogel, R.F., Böcker, G., Stolz, P., Ehrmann, M., Fanta, D., Ludwig, W., Pot, B., Kersters, K., Schleifer, K.H., Hammes, W.P., 1994. Identification of lactobacilli from sourdough and description of Lactobacillus pontis sp. nov. Int. J. Syst. Bacteriol. 44, 223-229.	Y		DSM 8475	Vogel, R.F., Böcker, G., Stolz, P., Ehrmann, M., Fanta, D., Ludwig, W., Pot, B., Kersters, K., Schleifer, K.H., Hammes, W.P., 1994. Identification of lactobacilli from sourdough and description of Lactobacillus pontis sp. nov. Int. J. Syst. Bacteriol. 44, 223-229.
2009	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus rapi	Vegetables	Watanabe, K., Fujimoto, J., Tomii, Y., Sasamoto, M., Makino, H., Kudo., Y., Okada, S., 2009. Lactobacillus kisonensis sp. nov., Lactobacillus otakiensis sp. nov., Lactobacillus rapi sp. nov. and Lactobacillus sunkii sp. nov., heterofermentative species isolated from sunki, a traditional Japanese pickle. Int. J. Syst. Evol. Microbiol. 59, 754-760.			DSM 19907	Watanabe, K., Fujimoto, J., Tomii, Y., Sasamoto, M., Makino, H., Kudo., Y., Okada, S., 2009. Lactobacillus kisonensis sp. nov., Lactobacillus otakiensis sp. nov., Lactobacillus rapi sp. nov. and Lactobacillus sunkii sp. nov., heterofermentative species isolated from sunki, a traditional Japanese pickle. Int. J. Syst. Evol. Microbiol. 59, 754-760.
1980	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus reuteri	Sourdough	Ehrmann, M.A., Vogel, R.F., 2005. Molecular taxonomy and genetics of sourdough lactic acid bacteria Trends in Food Science & Technology 16, 31-42.	Y	Y	ATCC 23272	[Kandler, O., Stetter, K.O., Köhl, R., 1980. Lactobacillus reuteri sp. nov., a new species of heterofermentative lactobacilli. Zentralbl. Mikrobiol. Parasitenkd. Infektionskr. Hyg. Abt. 1 Orig. C1, 264-269.]
1980	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus rhamnosus	Dairy, Vegetables, Meat	Lee, H., Yoon, H., Ji, Y., Kim, H.,Park, H., Lee, J., Shin, H., Holzapfel, W. 2011. Functional properties of Lactobacillus strains isolated from kimchi. Int J Food Microbiol. 145, 155-61.	Y	Y	ATCC 7469	Collins, M.D., Phillips, B.A., Zanoni, P., 1989. Deoxyribonucleic acid homology studies of Lactobacillus casei, Lactobacillus paracasei sp. nov., subsp. paracasei and subsp. tolerans, and Lactobacillus rhamnosus sp. nov., comb. nov. Int. J. Syst. Bacteriol. 39, 105–108.
2005	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus rossiae	Sourdough	Corsetti, A., Settanni, L., Van Sinderen, D., Felis, G.E., Dellaglio, F., Gobbetti, M., 2005. Lactobacillus rossii sp. nov., isolated from wheat sourdough. Int. J. Syst. Evol. Microbiol. 55, 35-40.			DSM 15814	Corsetti, A., Settanni, L., Van Sinderen, D., Felis, G.E., Dellaglio, F., Gobbetti, M., 2005. Lactobacillus rossii sp. nov., isolated from wheat sourdough. Int. J. Syst. Evol. Microbiol. 55, 35-40.
1993	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus sakei subsp carnosus	Meat	Bover-Cid, S. Mixed starter cultures to control biogenic amine production in dry fermented sausages. J Food Prot. 63, 1556-62.	Y		CCUG 31331	Torriani, S., Van Reenen, C.A., Klein, G., Reuter, G., Dellaglio, F., Dicks, L.M.T., 1996. Lactobacillus curvatus subsp. curvatus subsp. nov. and Lactobacillus curvatus subsp. melibiosus subsp. nov. and Lactobacillus sake subsp. sake subsp. nov. and Lactobacillus sake subsp. carnosus subsp. nov., new subspecies of Lactobacillus curvatus Abo-Elnaga and Kandler 1965 and Lactobacillus sake Katagiri, Kitahara, and Fukami 1934 (Klein et al. 1996, emended descriptions), respectively. Int. J. Syst. Bacteriol. 46, 1158-1163.
1991	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus sakei subsp. sakei	Meat, Beverages	Bover-Cid, S. Mixed starter cultures to control biogenic amine production in dry fermented sausages. J Food Prot. 63; 1556-62. [Katagiri, H., Kitahara, K., Fukami, K., 1934. The characteristics of the lactic acid bacteria isolated from moto, yeast mashes for sake manufacture. IV. Classification of the lactic acid bacteria. Bulletin of the Agricultural Chemical Society of Japan 10, 156-157.]	Y	Y	ATCC 15521	[Katagiri, H., Kitahara, K., Fukami, K., 1934. The characteristics of the lactic acid bacteria isolated from moto, yeast mashes for sake manufacture. IV. Classification of the lactic acid bacteria. Bulletin of the Agricultural Chemical Society of Japan 10, 156-157.]
1996	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus salivarius subsp. Salivarius	Dairy	Coulin, P., 2006. Characterisation of the microflora of attiéké, a fermented cassava product, during traditional small-scale preparation. Int J Food Microbiol. 106, 131-6.	Y	Y	ATCC 11741	[Rogosa, M., Wiseman, R.F., Mitchell, J.A., Disraely, M.N., 1953. Species differentiation of oral lactobacilli from man including descriptions of Lactobacillus salivarius nov. spec. and Lactobacillus cellobiosus nov. spec. Journal of Bacteriology 65, 681-699.]
1950	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus sanfranciscensis	Sourdough	Vogel, R.F., 1999. Non-dairy lactic fermentations: the cereal world. Antonie Van Leeuwenhoek 76(1-4), 403-11.	Y	Y	ATCC 27651	Weiss, N., Schillinger, U., 1984. Lactobacillus sanfrancisco sp. nov., nom. rev. Syst. Appl. Microbiol. 5, 230-232.
2005	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus satsumensis	Vegetables	Endo, A., Okada, S., 2005. Lactobacillus satsumensis sp. nov., isolated from mashes of shochu, a traditional Japanese distilled spirit made from fermented rice and other starchy materials. Int. J. Syst. Evol. Microbiol. 55, 83-85.			NRIC 0604	Endo, A., Okada, S., 2005. Lactobacillus satsumensis sp. nov., isolated from mashes of shochu, a traditional Japanese distilled spirit made from fermented rice and other starchy materials. Int. J. Syst. Evol. Microbiol. 55, 83-85.

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2007	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus secaliphilus	Sourdough	Ehrmann, M.A., Brandt, M., Stolz, P., Vogel, R.F., Korakli, M., 2007. Lactobacillus secaliphilus sp. nov., isolated from type II sourdough fermentation. Int. J. Syst. Evol. Microbiol. 57, 745-750.			DSM 17896	Ehrmann, M.A., Brandt, M., Stolz, P., Vogel, R.F., Korakli, M., 2007. Lactobacillus secaliphilus sp. nov., isolated from type II sourdough fermentation. Int. J. Syst. Evol. Microbiol. 57, 745-750.
2008	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus senmaizukei	Vegetables	Hiraga, K., Ueno,Y., Sukontasing, S., Tanasupawat, S., Oda, K., 2008. Lactobacillus senmaizukei sp. nov., isolated from Japanese pickle. Int. J. Syst. Evol. Microbiol. 58, 1625-1629.			NBRC 103853	Hiraga, K., Ueno,Y., Sukontasing, S., Tanasupawat, S., Oda, K., 2008. Lactobacillus senmaizukei sp. nov., isolated from Japanese pickle. Int. J. Syst. Evol. Microbiol. 58, 1625-1629.
2006	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus siliginis	Sourdough	Aslam, Z., IM, W.T., Ten, L.N., Lee, M.J., Kim, K.H., Lee, S.T., 2006. Lactobacillus siliginis sp. nov., isolated from wheat sourdough in South Korea. Int. J. Syst. Evol. Microbiol. 56, 2209-2213.			NBRC 101315	Aslam, Z., IM, W.T., Ten, L.N., Lee, M.J., Kim, K.H., Lee, S.T., 2006. Lactobacillus siliginis sp. nov., isolated from wheat sourdough in South Korea. Int. J. Syst. Evol. Microbiol. 56, 2209-2213.
2010	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus similis	Vegetables	Kitahara, M., Sakamoto, M., Benno, Y., 2010. Lactobacillus similis sp. nov., isolated from fermented cane molasses. Int. J. Syst. Evol. Microbiol. 60, 187-190.			JCM 2765	Kitahara, M., Sakamoto, M., Benno, Y., 2010. Lactobacillus similis sp. nov., isolated from fermented cane molasses. Int. J. Syst. Evol. Microbiol. 60, 187-190.
2004	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus spicheri	Sourdough	Meroth, C.B., Hammes, W.P., Hertel, C., 2004. Characterisation of the microbiota of rice sourdoughs and description of Lactobacillus spicheri sp. nov. Syst. Appl. Microbiol. 27, 151-159.			DSM 15429	Meroth, C.B., Hammes, W.P., Hertel, C., 2004. Characterisation of the microbiota of rice sourdoughs and description of Lactobacillus spicheri sp. nov. Syst. Appl. Microbiol. 27, 151-159.
1989	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus suebicus	Fruits	Kleynmans, U., Heinzl, H., Hammes, W.P., 1989. Lactobacillus suebicus sp. nov., an obligately heterofermentative Lactobacillus species isolated from fruit mashes. Syst. Appl. Microbiol. 11, 267-271.			DSM 5007	Kleynmans, U., Heinzl, H., Hammes, W.P., 1989. Lactobacillus suebicus sp. nov., an obligately heterofermentative Lactobacillus species isolated from fruit mashes. Syst. Appl. Microbiol. 11, 267-271.
2009	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus sunkii	Vegetables	Watanabe, K., Fujimoto, J., Tomii, Y., Sasamoto, M., Makino, H., Kudo., Y., Okada, S., 2009. Lactobacillus kisonensis sp. nov., Lactobacillus otakiensis sp. nov., Lactobacillus rapi sp. nov. and Lactobacillus sunkii sp. nov., heterofermentative species isolated from sunki, a traditional Japanese pickle. Int. J. Syst. Evol. Microbiol. 59, 754-760.			DSM 19904	Watanabe, K., Fujimoto, J., Tomii, Y., Sasamoto, M., Makino, H., Kudo., Y., Okada, S., 2009. Lactobacillus kisonensis sp. nov., Lactobacillus otakiensis sp. nov., Lactobacillus rapi sp. nov. and Lactobacillus sunkii sp. nov., heterofermentative species isolated from sunki, a traditional Japanese pickle. Int. J. Syst. Evol. Microbiol. 59, 754-760.
2006	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus tucceti	Dairy, Meat	Chenoll, E., Macian, M.C., Aznar, R., 2006. Lactobacillus tucceti sp. nov., a new lactic acid bacterium isolated from sausage. Syst. Appl. Microbiol. 29, 389-395. Masoud, W., Takamiya, M., Vogensen, F.K., Lillevang, S., Al-Soud, W.A., Sørensen, S.J., Jakobsen, M., 2010. Characterization of bacterial populations in Danish raw milk cheeses made with different starter cultures by denaturating gradient gel electrophoresis (DGGE) and pyrosequencing. International Dairy Journal 21, 142-148.			DSM 20183	Chenoll, E., Macian, M.C., Aznar, R., 2006. Lactobacillus tucceti sp. nov., a new lactic acid bacterium isolated from sausage. Syst. Appl. Microbiol. 29, 389-395.
1983	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus vaccinostercus	Fruits, Vegetables, Cocoa	Arici, M., Coskun, F., 2001. Hardaliye: Fermented grape juice as a traditional Turkish beverage. Food Microbiology 18, 417–421. Papalexandratou, Z., Camu, N., Falony, G., de Vuyst, L., 2011. comparison of the bacterial species diversity of spontaneous cocoa bean fermentations carried out at selected farms in Ivory Coast and Brazil. Food Microbiol 28 964-73.			ATCC 33310	Kozaki, M., Okada, S., 1983. Lactobacillus vaccinostercus sp. nov. In: Validation of the Publication of New Names and New Combinations Previously Effectively Published Outside the IJSB, List no. 10. Int J Syst Bacteriol 33, 438–440.
2003	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus versmoldensis	Meat	Kröckel, L., Schillinger, U., Franz, C.M.A.P., Bantleon, A., Ludwig, W., 2003. Lactobacillus versmoldensis sp. nov., isolated from raw fermented sausage. Int. J. Syst. Evol. Microbiol. 53, 513-517.			DSM 14857	Kröckel, L., Schillinger, U., Franz, C.M.A.P., Bantleon, A., Ludwig, W., 2003. Lactobacillus versmoldensis sp. nov., isolated from raw fermented sausage. Int. J. Syst. Evol. Microbiol. 53, 513-517.
1983	Monera	Firmicutes	Lactobacillaceae	Lactobacillus	Lactobacillus yamanashiensis	Beverages	Nonomura, H., 1983. Lactobacillus yamanashiensis subsp. yamanashiensis and Lactobacillus yamanashiensis subsp. mali sp. and subsp. nov., nom. rev. Int. J. Syst. Bacteriol. 33, 406-407.			ATCC 27304	Nonomura, H., 1983. Lactobacillus yamanashiensis subsp. yamanashiensis and Lactobacillus yamanashiensis subsp. mali sp. and subsp. nov., nom. rev. Int. J. Syst. Bacteriol. 33, 406-407.
1887	Monera	Firmicutes	Lactobacillaceae	Pediococcus	Pediococcus acidilactici	Meat	Leroy, F., 2006. Functional meat starter cultures for improved sausage fermentation. Int J Food Microbiol. 106, 270-85.	Y	Y	ATCC 33314	[Lindner, P., 1887. Über ein neues in Malzmaischen vorkommendes, milchsäurebildendes Ferment. Wochenschrift fur Brauerei 4, 437-440.]

Documented	Kingdom	Phylum	Family	Genus	Taxonomy	Food Usage	Reference Food Usage	QPS	Danish List	Type Strain	Reference Taxonomy
1961	Monera	Firmicutes	Lactobacillaceae	Pediococcus	Pediococcus parvulus	Wine	Arevalo-Villena, M., Bartowsky, E.J., Capone, D., Sefton, M.A., 2010. Production of indole by wine-associated microorganisms under oenological conditions. Food Microbiol 27(5):685-90.			ATCC 19371	Gunther, H.L., White, H.R., 1961. The cultural and physiological characters of the pediococci. J. Gen. Microbiol. 26:185-197.
1934	Monera	Firmicutes	Lactobacillaceae	Pediococcus	Pediococcus pentosaceus	Meat	Leroy, F., 2006. Functional meat starter cultures for improved sausage fermentation. Int J Food Microbiol. 106, 270-85.	Y	Y	ATCC 33316	[Mees, R.H., 1934. Onderzoekingen over de Biersarcina. Thesis. Technical University Delft, Holland, pp. 1-110.]
1932	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc carnosum	Meat	Jacobsen, T., Budde, B.B., Koch, A.G., 2003. Application of Leuconostoc carnosum for biopreservation of cooked meat products. J Appl Microbiol. 95, 242-249.			ATCC 49367	Shaw, B. G., Harding, C.D., 1989. Leuconostoc gelidum sp. nov and sp. nov. Leuconostoc gelidum from chillstored meats. Int. J. Syst. Bacteriol. 39, 217–223.
1989	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc citreum	Dairy, Fish	Cibik, R., 2000. Molecular diversity of leuconostoc mesenteroides and leuconostoc citreum isolated from traditional french cheeses as revealed by RAPD fingerprinting, 16S rDNA sequencing and 16S rDNA fragment amplification. Syst Appl Microbiol. 23, 267-78. Paludan-Müller, C., 1999. Characterization of lactic acid bacteria isolated from a Thai low-salt fermented fish product and the role of garlic as substrate for fermentation. Int J Food Microbiol. 46, 219-29.	Y		ATCC 13146	Farrow, J.A.E., Facklam, R.R., Collins, M.D., 1989. Nucleic acid homologies of some vancomycin-resistant leuconostocs and description of Leuconostoc citreum sp. nov. and Leuconostoc pseudomesenteroides sp. nov. Int. J. Syst. Bacteriol. 39, 279-283.
1991	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc fallax	Vegetables	Barrangou, R., 2002. Identification and characterization of Leuconostoc fallax strains isolated from an industrial sauerkraut fermentation. Appl Environ Microbiol. 68, 2877-84.			ATCC 700006	Martinez-Murcia, A.J., Collins, M.D., 1991. A phylogenetic analysis of an atypical leuconostoc: description of Leuconostoc fallax sp. nov. FEMS Microbiol. Lett. 82, 55-60. VL 40.
2007	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc holzapfelii	Coffee	De Bruyne, K., Schillinger, U., Caroline, L., Boehringer, B., Cleenwerck, I., Vancanneyt, M., De Vuys, L., Franz, C.M.A.P., Vandamme, P., 2007.Leuconostoc holzapfelii sp. nov., isolated from Ethiopian coffee fermentation and assessment of sequence analysis of housekeeping genes for delineation of Leuconostoc species. Int. J. Syst. Evol. Microbiol. 57, 2952-2959.			DSM 20189	De Bruyne, K., Schillinger, U., Caroline, L., Boehringer, B., Cleenwerck, I., Vancanneyt, M., De Vuys, L., Franz, C.M.A.P., Vandamme, P., 2007.Leuconostoc holzapfelii sp. nov., isolated from Ethiopian coffee fermentation and assessment of sequence analysis of housekeeping genes for delineation of Leuconostoc species. Int. J. Syst. Evol. Microbiol. 57, 2952-2959.
2003	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc inhae	Vegetables	Kim, B., Lee, J., Jang, J., Kim, J., Han, H., 2003. Leuconostoc inhae sp. nov., a lactic acid bacterium isolated from kimchi. Int. J. Syst. Evol. Microbiol. 53, 1123-1126.			DSM 1510	Kim, B., Lee, J., Jang, J., Kim, J., Han, H., 2003. Leuconostoc inhae sp. nov., a lactic acid bacterium isolated from kimchi. Int. J. Syst. Evol. Microbiol. 53, 1123-1126.
2000	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc kimchii	Vegetables	Kim, J., Chun, J., Han, H.U., 2000. Leuconostoc kimchii sp. nov., a new species from kimchi. Int. J. Syst. Evol. Microbiol. 50, 1915-1919.			IMSNU 11154	Kim, J., Chun, J., Han, H.U., 2000. Leuconostoc kimchii sp. nov., a new species from kimchi. Int. J. Syst. Evol. Microbiol. 50, 1915-1919.
1903	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc lactis	Dairy	Baroudi, A.A., 1976. Microorganisms and characteristics of laban. J Dairy Sci. 59, 200-2. Baroudi AA	Y		ATCC 19256	Garvie, E.I., 1960. The genus Leuconostoc and its nomenclature. J. Dairy Res. 27, 283–292.
1903	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc mesenteroides subsp.cremoris	Dairy	Lazos, E.S., 1993. The fermentation of trahanas: a milk-wheat flour combination. Plant Foods Hum Nutr. 44, 45-62.	Y	Y	ATCC 8293	Garvie, E.I., 1983. Leuconostoc mesenteroides subsp. Cremoris (Knudsen and Sørensen) comb. nov. and Leuconostoc mesenteroides subsp. dextranicum Beijernick) comb. nov. Int. J. Syst. Bacteriol. 33, 118–119.
1903	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc mesenteroides subsp.dextranicum	Dairy	Keenan, T.W., 1968. Production of acetic acid and other volatile compounds by Leucoostoc citrovorum and Leuconostoc dextranicum. Appl Microbiol. 16, 1881-5.	Y	Y	ATCC 19255	Garvie, E.I., 1983. Leuconostoc mesenteroides subsp. Cremoris (Knudsen and Sørensen) comb. nov. and Leuconostoc mesenteroides subsp. dextranicum Beijernick) comb. nov. Int. J. Syst. Bacteriol. 33, 118–119.
1949	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc mesenteroides subsp.mesenteroides	Dairy, Vegetables	Pedersen, C.S., 1962. Fermentation of the Yugoslavian pickled cabbage. Appl Microbiol. 10, 86-9. PEDERSON CS	Y	Y	ATCC 8293	Van Tieghem, P.E.L., 1878. Sur la gomme de sucrerie. Ann. Sci. Nat. Bot., 6e Ser. 67, 180–202.
2009	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc palmae	Wine	Ehrmann, M.A., Freiding, S., Vogel, R.F., 2009. Leuconostoc palmae sp. nov., a novel lactic acid bacterium isolated from palm wine. Int. J. Syst. Evol. Microbiol. 59, 943-947.			DSM 21144	Ehrmann, M.A., Freiding, S., Vogel, R.F., 2009. Leuconostoc palmae sp. nov., a novel lactic acid bacterium isolated from palm wine. Int. J. Syst. Evol. Microbiol. 59, 943-947.

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1989	Monera	Firmicutes	Leuconostocaceae	Leuconostoc	Leuconostoc pseudomesenteroides	Dairy	Parente, E., Grieco, S., Crudele, M.A., 2001. Phenotypic diversity of lactic acid bacteria isolated from fermented sausages produced in Basilicata (Southern Italy). Journal of Applied Microbiology. 90, 943-52. Callon, C., Millet, L., Montel, M.C., 2004. Diversity of lactic acid bacteria isolated from AOC Salers cheese. Journal of Dairy Research 71, 231-44. Abriouel, H., Martín-Platero, A., Maqueda, M., Valdivia, E., Martínez-Bueno, M., 2008. Biodiversity of the microbial community in a Spanish farmhouse cheese as revealed by culture-dependent and culture-independent methods. International Journal of Food Microbiology 127, 200-8. Sengun, I.Y., Nielsen, D.S., Karapinar, M., Jakobsen, M., 2009. Identification of lactic acid bacteria isolated from Tarhana, a traditional Turkish fermented food. International Journal of Food Microbiology 135, 105-11.		Y	ATCC 12291	Farrow, J.A.E., Facklam, R.R., Collins, M.D., 1989. Nucleic acid homologies of some vancomycin-resistant leuconostocs and description of Leuconostoc citreum sp. nov. and Leuconostoc pseudomesenteroides. Int. J. Syst. Bacteriol. 39, 279–283.
1967	Monera	Firmicutes	Leuconostocaceae	Oenococcus	Oenococcus oeni	Wine	Edwards, C.G., 1989. Inducing malolactic fermentation in wines. Biotechnol Adv. 7, 333-60.	Y	Y	ATCC 23279	Dicks, L.M., 1995. Proposal to reclassify Leuconostoc oenos as Oenococcus oeni [corrig.] gen. nov., comb. nov. Int J Syst Bacteriol. 45, 395-7.
1969	Monera	Firmicutes	Leuconostocaceae	Weissella	Weisella confusa	Sourdough	Katina, K., 2009. In situ production and analysis of Weissella confusa dextran in wheat sourdough. Food Microbiol. 26(7):734-43			ATCC 10881	Collins, M.D., Samelis, J., Metaxopoulos, J., Wallbanks, S., 1993. Taxonomic studies on some Leuconostoc-like organisms from fermented sausages: description of a new genus Weissella for the Leuconostoc paramesenteroides group of species. J. Appl. Bacteriol. 75, 595-603.
2010	Monera	Firmicutes	Leuconostocaceae	Weissella	Weissella beninensis	Vegetables	Padonou, S.W., Schillinger, U., Nielsen, D.S., Franz, C.M.A.P., Hansen, M., Hounhouigan, J.D., Nago, M.C., Jakobsen, M., 2010. Weissella beninensis sp. nov., a motile lactic acid bacterium from submerged cassava fermentations, and emended description of the genus Weissella. Int. J. Syst. Evol. Microbiol. 60, 2193-2198.			DSM 22752	Padonou, S.W., Schillinger, U., Nielsen, D.S., Franz, C.M.A.P., Hansen, M., Hounhouigan, J.D., Nago, M.C., Jakobsen, M., 2010. Weissella beninensis sp. nov., a motile lactic acid bacterium from submerged cassava fermentations, and emended description of the genus Weissella. Int. J. Syst. Evol. Microbiol. 60, 2193-2198.
2002	Monera	Firmicutes	Leuconostocaceae	Weissella	Weissella cibaria	Vegetables	Björkroth, K.J., Schillinger, U., Geisen, R., Weiss, N., Hoste, B., Holzapfel, W.H., Korkeala, H.J., Vandamme, P., 2002. Taxonomic study of Weissella confusa and description of Weissella cibaria sp. nov., detected in food and clinical samples. Int. J. Syst. Evol. Microbiol. 52, 141-148.			LMG 17699	Björkroth, K.J., Schillinger, U., Geisen, R., Weiss, N., Hoste, B., Holzapfel, W.H., Korkeala, H.J., Vandamme, P., 2002. Taxonomic study of Weissella confusa and description of Weissella cibaria sp. nov., detected in food and clinical samples. Int. J. Syst. Evol. Microbiol. 52, 141-148.
2010	Monera	Firmicutes	Leuconostocaceae	Weissella	Weissella fabaria	Cocoa	De Bruyne, K., Camu, N., De Vuyst, L., Vandamme, P., 2010. Weissella fabaria sp. nov., from a Ghanaian cocoa fermentation. Int. J. Syst. Evol. Microbiol. 60, 1999-2005.			DSM 21416	De Bruyne, K., Camu, N., De Vuyst, L., Vandamme, P., 2010. Weissella fabaria sp. nov., from a Ghanaian cocoa fermentation. Int. J. Syst. Evol. Microbiol. 60, 1999-2005.
2008	Monera	Firmicutes	Leuconostocaceae	Weissella	Weissella ghanensis	Cocoa	De Bruyne, K., Camu, N., Lefebvre, K., De Vuyst, L., Vandamme, P., 2008. Weissella ghanensis sp. nov., isolated from a Ghanaian cocoa fermentation. Int. J. Syst. Evol. Microbiol. 58, 2721-2725.			LMG 24286	De Bruyne, K., Camu, N., Lefebvre, K., De Vuyst, L., Vandamme, P., 2008. Weissella ghanensis sp. nov., isolated from a Ghanaian cocoa fermentation. Int. J. Syst. Evol. Microbiol. 58, 2721-2725.
1994	Monera	Firmicutes	Leuconostocaceae	Weissella	Weissella hellenica	Meat	Collins, M.D., Samelis, J., Metaxopoulos, J., Wallbanks, S., 1993. Taxonomic studies on some Leuconostoc-like organisms from fermented sausages: description of a new genus Weissella for the Leuconostoc paramesenteroides group of species. J. Appl. Bacteriol. 75, 595-603.			DSM 7378	Collins, M.D., Samelis, J., Metaxopoulos, J., Wallbanks, S., 1993. Taxonomic studies on some Leuconostoc-like organisms from fermented sausages: description of a new genus Weissella for the Leuconostoc paramesenteroides group of species. J. Appl. Bacteriol. 75, 595-603.
2002	Monera	Firmicutes	Leuconostocaceae	Weissella	Weissella koreensis	Vegetables	Lee J.S., Lee, K.C., Ahn, J.S., Mheen, T.I., Pyun, Y.R., Park, Y.H., 2002. Weissella koreensis sp. nov., isolated from kimchi. Int. J. Syst. Evol. Microbiol. 52, 1257-1261.			KCTC 3621	Lee J.S., Lee, K.C., Ahn, J.S., Mheen, T.I., Pyun, Y.R., Park, Y.H., 2002. Weissella koreensis sp. nov., isolated from kimchi. Int. J. Syst. Evol. Microbiol. 52, 1257-1261.
1993	Monera	Firmicutes	Leuconostocaceae	Weissella	Weissella paramesenteroides	Meat	Collins, M.D., Samelis, J., Metaxopoulos, J., Wallbanks, S., 1993. Taxonomic studies on some Leuconostoc-like organisms from fermented sausages: description of a new genus Weissella for the Leuconostoc paramesenteroides group of species. J. Appl. Bacteriol. 75, 595-603.			ATCC 33313	Collins, M.D., Samelis, J., Metaxopoulos, J., Wallbanks, S., 1993. Taxonomic studies on some Leuconostoc-like organisms from fermented sausages: description of a new genus Weissella for the Leuconostoc paramesenteroides group of species. J. Appl. Bacteriol. 75, 595-603.

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2000	Monera	Firmicutes	Leuconostocaceae	Weissella	Weissella thailandensis	Fish	Tanasupawat, S., Shida, O., Okada, S., Komagata, K., 2000. Lactobacillus acidipiscis sp. nov. and Weissella thailandensis sp. nov., isolated from fermented fish in Thailand. International Journal of Systematic and Evolutionary Microbiology 50, 1479-85.			JCM 10695	Tanasupawat, S., Shida, O., Okada, S., Komagata, K., 2000. Lactobacillus acidipiscis sp. nov. and Weissella thailandensis sp. nov., isolated from fermented fish in Thailand. International Journal of Systematic and Evolutionary Microbiology 50, 1479-85.
1950	Monera	Firmicutes	Staphylococcaceae	Macrococcus	Macrococcus caseolyticus	Dairy, Meat	Bhowmik, T. Marth, E.H., 1990. Role of Micrococcus and Pediococcus species in cheese ripening. J. Dairy Sci 73, 859-866.			ATCC 13548	Kloos, W.E., Ballard, D.N., George, C.G.,Webster, J.A., Hubner, R.J., Ludwig, W., Schleifer, K.H., Fiedler, F. Schubert, K., 1998. Delimiting the genus Staphylococcus through description of Macrococcus caseolyticus gen. nov., comb. nov. and Macrococcus equipercicus sp. nov., Macrococcus bovicus sp. nov. and Macrococcus carouselicus sp. nov. Int. J. Syst. Bacteriol. 48, 859-877.
1970	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus carnosus subsp. carnosus	Meat	Marchesini, B., 1992. Microbiological events during commercial meat fermentations. J Appl Bacteriol. 73, 203-9.		Y	ATCC 51365	Probst, A.J., Hertel, C., Richter, L., Wassill, L., Ludwig, W., Hammes, W.P., 1998. Staphylococcus condimenti sp. nov., from soy sauce mash, and Staphylococcus carnosus (Schleifer and Fischer 1982) subsp. utilis subsp. nov. Int. J. Syst. Bacteriol. 48, 651-658.
1970	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus carnosus subsp. utilis	Meat	Marchesini, B., 1992. Microbiological events during commercial meat fermentations. J Appl Bacteriol. 73, 203-9.		Y	DSM 11676	Probst, A.J., Hertel, C., Richter, L., Wassill, L., Ludwig, W., Hammes, W.P., 1998. Staphylococcus condimenti sp. nov., from soy sauce mash, and Staphylococcus carnosus (Schleifer and Fischer 1982) subsp. utilis subsp. nov. Int. J. Syst. Bacteriol. 48, 651-658.
1975	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus cohnii	Dairy, Meat	Deetae, P., 2007. Production of volatile aroma compounds by bacterial strains isolated from different surface-ripened French cheeses. Appl Microbiol Biotechnol. 76(5):1161-71. Drosinos, E.H., 2007. Phenotypic and technological diversity of lactic acid bacteria and staphylococci isolated from traditionally fermented sausages in southern Greece. Food Microbiol. 24(3):260-70.			ATCC 29974	Schleifer, K.H., Kloos, W.E., 1975. Isolation and characterization of staphylococci from human skin. I. Amended descriptions of Staphylococcus epidermidis and Staphylococcus saprophyticus,and descriptions of three new species: Staphylococcus cohnii, Staphylococcus haem, and Staphylococcus xylosus. Int. J. Syst. Bacteriol. 25:50-61.
1970	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus condimenti	Soy	Probst, A.J., Hertel, C., Richter, L., Wassill, L., Ludwig, W., Hammes, W.P., 1998. Staphylococcus condimenti sp. nov., from soy sauce mash, and Staphylococcus carnosus (Schleifer and Fischer 1982) subsp. utilis subsp. nov. Int. J. Syst. Bacteriol. 48, 651-658.			DSM 11674	Probst, A.J., Hertel, C., Richter, L., Wassill, L., Ludwig, W., Hammes, W.P., 1998. Staphylococcus condimenti sp. nov., from soy sauce mash, and Staphylococcus carnosus (Schleifer and Fischer 1982) subsp. utilis subsp. nov. Int. J. Syst. Bacteriol. 48, 651-658.
1997	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus equorum subsp. equorum	Dairy, Meat	Usage in meat fermentation: Schlafmann, K., Meusburger, A.P., Hammes, W.P., Braun, C., Fischer, A., Hertel, C., 2002. Starterkulturen zur Verbesserung der Qualität von Rohschinken. Fleischwirtschaft 11, 108-114. Food usage in Cheese: Carnio, M., Höltzel, A., Rudolf, M., Henle, T., Jung, G., Scherer, S., 2000. The Macrocyclic Peptide Antibiotic Micrococcin P1 Is Secreted by the Food-Borne Bacterium Staphylococcus equorum WS 2733 and Inhibits Listeria monocytogenes on Soft Cheese. Appl Environ Microbiol. 66, 2378–2384.			DSM 20674	Schleifer, K.H., Kilpper-Bälz, R., Devriese, L.A., 1985. Staphylococcus arlettae sp. nov., S. equorum sp. nov. and S. kloosii sp. nov.: three new coagulase-negative, novobiocin-resistant species from animals. Syst. Appl. Microbiol. 5, 501-509.
2003	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus equorum subsp. linens	Dairy	Place, R.B., Hiestand, D., Gallmann, H.R., Teuber, M., 2003. Staphylococcus equorum subsp. linens, subsp. nov., a starter culture component for surface ripened semi-hard cheeses. Syst. Appl. Microbiol. 26, 30-37.			DSM 15097	Place, R.B., Hiestand, D., Gallmann, H.R., Teuber, M., 2003. Staphylococcus equorum subsp. linens, subsp. nov., a starter culture component for surface ripened semi-hard cheeses. Syst. Appl. Microbiol. 26, 30-37.

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2000	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus fleurettii	Dairy	Vernozy-Rozand, C., Mazuy, ., Meugnier, H., Bes, M., Lasne, Y., Fiedler, F., Etienne, J., Freney, J., 2000. Staphylococcus fleurettii sp. nov., isolated from goat's milk cheeses. Int. J. Syst. Evol. Microbiol. 50, 1521-1527.			CIP 106114	Vernozy-Rozand, C., Mazuy, ., Meugnier, H., Bes, M., Lasne, Y., Fiedler, F., Etienne, J., Freney, J., 2000. Staphylococcus fleurettii sp. nov., isolated from goat's milk cheeses. Int. J. Syst. Evol. Microbiol. 50, 1521-1527.
1992	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus piscifermentans	Fish	Tanasupawat, S., Hashimoto, Y., Ezaki, T., Kozaki, M., Komagata, K., 1992. Staphylococcus piscifermentans sp. nov., from fermented fish in Thailand. Int. J. Syst. Bacteriol. 42, 577-581.			NRIC 1817	Tanasupawat, S., Hashimoto, Y., Ezaki, T., Kozaki, M., Komagata, K., 1992. Staphylococcus piscifermentans sp. nov., from fermented fish in Thailand. Int. J. Syst. Bacteriol. 42, 577-581.
1940	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus saprophyticus	Meat	Kaban, G.J., 2008. Identification of lactic acid bacteria and Gram-positive catalase-positive cocci isolated from naturally fermented sausage (sucuk). Food Sci. 73(8):M385-8.			ATCC 15305	(Fairbrother 1940) Shaw, C., Stitt, M., Cowan, S.T., 1951. Staphylococci and their classification. J. Gen. Microbiol. 5: 1010-1023.
1976	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus sciuri subsp. sciuri	Dairy	O'Halloran, R., 1998. Purification of an extracellular proteinase from Staphylococcus sciuri found on the surface of Tilsit cheese.Biochem Soc Trans. 26, S29. O'Halloran R			ATCC 29062	Kloos, W.E., Schleifer, K.H., Smith, R.F., 1976. Characterization of Staphylococcus sciuri sp. nov. and its subspecies. International Journal of Systematic Bacteriology 26, 22-37.

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1998	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus succinus subsp succinus	Meat	Talon, R., Leroy, S., Lebert, I., Giammarinaro, P., Chacornac, J.P., Latorre-Moratalla, M., Vidal-Carou, C., Zanardi, E., Conter, M., Lebecque, A., 2008. Safety improvement and preservation of typical sensory qualities of traditional dry fermented sausages using autochthonous starter cultures. International Journal of Food Microbiology 126, 227-34. Villani, F., Casaburi, A., Pennacchia, C., Filosa, L., Russo, F., Ercolini, D., 2008. Microbial ecology of the soppressata of Vallo di Diano, a traditional dry fermented sausage from southern Italy, and in vitro and in situ selection of autochthonous starter cultures. Applied and Environmental Microbiology 73, 5453-63.			ATCC 700337	Lambert, L.H., Cox, T., Mitchell, K., Rosselló-Mora, R.A., Del Cueto, C., Dodge, D.E., Orkand, P., Cano, R.J., 1998. Staphylococcus succinus sp. nov., isolated from Dominican amber. Int J Syst Bacteriol. 48 Pt 2:511-8.
2002	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus succinus subsp. casei	Dairy	Place, R.B., Hiestand, D., Burri, S., Teuber, M., 2002. Staphylococcus succinus subsp. casei subsp. nov., a dominant isolate from a surface ripened cheese. Systematic and Applied Microbiology 25, 353-9.			DSM 15096	Place, R.B., Hiestand, D., Burri, S., Teuber, M., 2002. Staphylococcus succinus subsp. casei subsp. nov., a dominant isolate from a surface ripened cheese. Systematic and Applied Microbiology 25, 353-9.
<1996	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus vitulinus	Dairy, Meat	Bannerman, J.A., Hubner, R.J., Ballard, D.N., Cole, E.M., Bruce, J.L., Fiedler, F., Schubert, K., Kloos, W.E., 1994. Identification of the Staphylococcus sciuri species group with EcoRI fragments containing rRNA sequences and description of Staphylococcus vitulus sp. nov. Int. J. Syst. Bacteriol. 44, 454-460.			ATCC 51145	Bannerman, J.A., Hubner, R.J., Ballard, D.N., Cole, E.M., Bruce, J.L., Fiedler, F., Schubert, K., Kloos, W.E., 1994. Identification of the Staphylococcus sciuri species group with EcoRI fragments containing rRNA sequences and description of Staphylococcus vitulus sp. nov. Int. J. Syst. Bacteriol. 44, 454-460.
1924	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus warneri	Meat	Corbière Morot-Bizot, S., 2006. Staphylococcal community of a small unit manufacturing traditional dry fermented sausages. Int J Food Microbiol. 108, 210-7.			ATCC 2783	Kloos, W.E., Schleifer, K.H., 1975. Isolation and characterization of staphylococci from human skin. II. Description of four new species: Staphylococcus warneri, Staphylococcus capitis, Staphylococcus hominis, and Staphylococcus simulans. International Journal of Systematic Bacteriology 25, 62-79.
1980	Monera	Firmicutes	Staphylococcaceae	Staphylococcus	Staphylococcus xylosus	Dairy	Corbière Morot-Bizot, S., 2006. Staphylococcal community of a small unit manufacturing traditional dry fermented sausages. Int J Food Microbiol. 108, 210-7.		Y	ATCC 29971	Schleifer, K.H., Kloos, W.E., 1975. Isolation and characterization of staphylococci from human skin. I. Amended descriptions of Staphylococcus epidermidis and Staphylococcus saprophyticus and descriptions of three new species: Staphylococcus cohnii, Staphylococcus haemolyticus, and Staphylococcus xylosus. International Journal of Systematic Bacteriology 25, 50-61.
1903	Monera	Firmicutes	Streptococacceae	Lactococcus	Lactococcus lactis subsp.cremoris	Dairy	Thomas, T.D., Turner, K.W., Crow, V.L., 1980. Galactose fermentation by Streptococcus lactis and Streptococcus cremoris: pathways, products, and regulation. J Bacteriol. 144, 672-82.	Y	Y	ATCC 19257	Orla-Jensen, S. 1924. La classification des bactéries lactiques. Lait 4, 468–474.
1903	Monera	Firmicutes	Streptococacceae	Lactococcus	Lactococcus lactis subsp.lactis	Dairy, Meat	Thomas, T.D., Turner, K.W., Crow, V.L., 1980. Galactose fermentation by Streptococcus lactis and Streptococcus cremoris: pathways, products, and regulation. J Bacteriol. 144, 672-82.	Y	Y	ATCC 19435	Lister, J., 1873. A further contribution to the natural history of bacteria and the germ theory of fermentative changes. Quart. Microbiol. Sci. 13, 380–408.
1932	Monera	Firmicutes	Streptococacceae	Lactococcus	Lactococcus raffinolactis	Dairy	Ouadghiri, M.,Amar, M., Vancanneyt, M., Swings, J., 2005. Biodiversity of lactic acid bacteria in Moroccan soft white cheese (Jben).FEMS Microbiol Lett. 251, 267-71.			ATCC 43920	Orla-Jensen, A.D., Hansen, P.A., 1932. The bacteriological flora of spontaneously soured milk and of commercial starters for butter making. Zentralbl. Bakteriol. Parasitenkd. Infektionskr Hyg. Abt. 2 86, 6-29.
1998	Monera	Firmicutes	Streptococacceae	Streptococcus	Streptococcus gallolyticus subsp. macedonicus	Dairy	Georgalaki, M.D.,Sarantinopoulos, P., Ferreira, E.S., De Vuyst, L., Kalantzopoulos, G., Tsakalidou, E., 2000. Biochemical properties of Streptococcus macedonicus strains isolated from Greek Kasseri cheese. Journal of Applied Microbiology 88, 817-25.			ATCC BAA249	Tsakalidou, E., 1998. Identification of streptococci from Greek Kasseri cheese and description of Streptococcus macedonicus sp. nov. Int J Syst Bacteriol. 48 Pt 2, 519-27.
1906	Monera	Firmicutes	Streptococacceae	Streptococcus	Streptococcus salivarius subsp. salivarius	Soy, Vegetables	Ongol, M.P., Asano, K., 2009. Main microorganisms involved in the fermentation of Ugandan ghee. Int J Food Microbiol. 133, 286-91. Chun, J., Kim, G.M., Lee, K., Choi, I.D., Kwon, G.H., Park, J.Y., Jeong, S.J., Kim, J.S., Kim, J.H., 2007. Conversion of Isoflavone Glucosides to Aglycones in Soymilk by Fermentation with Lactic Acid Bacteria. J Food Science 72(2) M39-44			ATCC 7073	Andrewes, F.W., Horder, T.J., 1906. A study of the streptococci pathogenic for man. Lancet ii:708-713.

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1919	Monera	Firmicutes	Streptococacceae	Streptococcus	Streptococcus salivarius subsp. thermophilus	Dairy	Sherman, J.M., Stark, P., 1938. The Fermentation of Disaccharides by Streptococcus thermophilus. J Bacteriol. 36, 77-81.	Y	Y	ATCC 19258	Orla-Jensen, S. 1924. La classification des bactéries lactiques. Lait 4, 468–474.
1864	Monera	Proteobacteria	Acetobacteraceae	Acetobacter	Acetobacter aceti subsp. aceti	Vinegar	Beppu, T., 1993-1994. Genetic organization of Acetobacter for acetic acid fermentation. Antonie Van Leeuwenhoek. 64, 121-35.			ATCC 15973	De Ley, J., Frateur, J., 1974. Genus Acetobacter. In: Buchanan, R.E., Gibbons, N.E. (Eds.), Bergey's Manual of Determinative Bacteriology, 8th ed. Williams and Wilkins. Baltimore, MD. 276–278.
2008	Monera	Proteobacteria	Acetobacteraceae	Acetobacter	Acetobacter fabarum	Cocoa, Coffee	Cleenwerck, I., 2008. Acetobacter fabarum sp. nov., an acetic acid bacterium from a Ghanaian cocoa bean heap fermentation.Int J Syst Evol Microbiol. 58(Pt 9), 2180-5.			DSM 19596	Cleenwerck, I., 2008. Acetobacter fabarum sp. nov., an acetic acid bacterium from a Ghanaian cocoa bean heap fermentation.Int J Syst Evol Microbiol. 58(Pt 9), 2180-5.
1950	Monera	Proteobacteria	Acetobacteraceae	Acetobacter	Acetobacter lovaniensis	Vegetables	Ongol, M.P., Asano, K., 2009. Main microorganisms involved in the fermentation of Ugandan ghee. Int J Food Microbiol. 133, 286-91.			IFO 16606	Lisdiyanti, P., 2000. Systematic study of the genus Acetobacter with descriptions of Acetobacter indonesiensis sp. nov., Acetobacter tropicalis sp. nov., Acetobacter orleanensis (Henneberg 1906) comb. nov., Acetobacter lovaniensis (Frateur 1950) comb. nov., and Acetobacter estunensis (Carr 1958) comb. nov. J Gen Appl Microbiol. 46, 147-165.
2002	Monera	Proteobacteria	Acetobacteraceae	Acetobacter	Acetobacter malorum	Vinegar	Gullo, M., 2008. Acetic acid bacteria in traditional balsamic vinegar: phenotypic traits relevant for starter cultures selection.Int J Food Microbiol. 125, 46-53.			DSM 14337	Cleenwerck, I., 2002. Re-examination of the genus Acetobacter, with descriptions of Acetobacter cerevisiae sp. nov. and Acetobacter malorum sp. nov. Int J Syst Evol Microbiol. 52(Pt 5), 1551-8.
2001	Monera	Proteobacteria	Acetobacteraceae	Acetobacter	Acetobacter orientalis	Vegetables	Ongol, M.P., Asano, K., 2009. Main microorganisms involved in the fermentation of Ugandan ghee. Int J Food Microbiol. 133, 286-91.			ATCC 12875	Lisdiyanti, P., 2001. Identification of Acetobacter strains isolated from Indonesian sources, and proposals of Acetobacter syzygii sp. nov., Acetobacter cibinongensis sp. nov., and Acetobacter orientalis sp. nov. J Gen Appl Microbiol. 47, 119-131.
1879	Monera	Proteobacteria	Acetobacteraceae	Acetobacter	Acetobacter pasteurianus subsp. pasteurianus	Vinegar, Cocoa	Nanda, K., Taniguchi, M., Ujike, S., Ishihara, N., Mori, H., Ono, H., Murooka, Y., 2001. Characterization of acetic acid bacteria in traditional acetic acid fermentation of rice vinegar (komesu) and unpolished rice vinegar (kurosu) produced in Japan. Appl Environ Microbiol. 67, 986-90.			ATCC 12874	De Ley, J., Frateur, J., 1974. Genus Acetobacter. In: Buchanan, R.E., Gibbons, N.E. (Eds.), Bergey's Manual of Determinative Bacteriology, 8th ed. Williams and Wilkins. Baltimore, MD. 276–278.
1998	Monera	Proteobacteria	Acetobacteraceae	Acetobacter	Acetobacter pomorum	Vinegar	Sokollek, S.J., Hertel, C., Hammes, W.P., 1998b. Description of Acetobacter oboediens sp. nov. and Acetobacter pomorum sp. nov., two new species isolated from industrial vinegar fermentations. Int. J. Syst. Bacteriol. 48, 935–940.			DSM 11825	Sokollek, S.J., Hertel, C., Hammes, W.P., 1998b. Description of Acetobacter oboediens sp. nov. and Acetobacter pomorum sp. nov., two new species isolated from industrial vinegar fermentations. Int. J. Syst. Bacteriol. 48, 935–940.
2001	Monera	Proteobacteria	Acetobacteraceae	Acetobacter	Acetobacter syzygii	Vinegar, Cocoa	Nielsen, D.S., 2007. The microbiology of Ghanaian cocoa fermentations analysed using culture-dependent and culture-independent methods.Int J Food Microbiol. 114, 168-86.			IFO 16604	Lisdiyanti, P., 2001. Identification of Acetobacter strains isolated from Indonesian sources, and proposals of Acetobacter syzygii sp. nov., Acetobacter cibinongensis sp. nov., and Acetobacter orientalis sp. nov. J Gen Appl Microbiol. 47, 119-131.
2000	Monera	Proteobacteria	Acetobacteraceae	Acetobacter	Acetobacter tropicalis	Cocoa, Coffee	Nielsen, D.S., 2007. The microbiology of Ghanaian cocoa fermentations analysed using culture-dependent and culture-independent methods.Int J Food Microbiol. 114, 168-86.			IFO 16470	Lisdiyanti, P., 2000. Systematic study of the genus Acetobacter with descriptions of Acetobacter indonesiensis sp. nov., Acetobacter tropicalis sp. nov., Acetobacter orleanensis (Henneberg 1906) comb. nov., Acetobacter lovaniensis (Frateur 1950) comb. nov., and Acetobacter estunensis (Carr 1958) comb. nov. J Gen Appl Microbiol. 46, 147-165.
2001	Monera	Proteobacteria	Acetobacteraceae	Gluconacetobacter	Gluconacetobacter azotocaptans	Cocoa, Coffee	Fuentes-Ramírez, L.E., Bustillos-Cristales, R., Tapia-Hernandez, A., Jimenez-Salgado, T., Wang, E.T., Martinez-Romero, E., Caballero-Mellado, J., 2001. Novel nitrogen-fixing acetic acid bacteria, Gluconacetobacter johannae sp. nov. and Gluconacetobacter azotocaptans sp. nov., associated with coffee plants. Int. J. Syst. Evol. Microbiol. 51, 1305–1314.			ATCC 700988	Fuentes-Ramírez, L.E., Bustillos-Cristales, R., Tapia-Hernandez, A., Jimenez-Salgado, T., Wang, E.T., Martinez-Romero, E., Caballero-Mellado, J., 2001. Novel nitrogen-fixing acetic acid bacteria, Gluconacetobacter johannae sp. nov. and Gluconacetobacter azotocaptans sp. nov., associated with coffee plants. Int. J. Syst. Evol. Microbiol. 51, 1305–1314.
1998	Monera	Proteobacteria	Acetobacteraceae	Gluconacetobacter	Gluconacetobacter diazotrophicus	Cocoa, Coffee	Jimenez-Salgado, T., 1997. Coffea arabica L., a new host plant for Acetobacter diazotrophicus, and isolation of other nitrogen-fixing acetobacteria. Appl Environ Microbiol. 63, 3676-83.			ATCC 49037	Yamada, Y., Hoshino, K.-I., Ishikawa, T., 1998. Validation of publication of new names and new combinations previously effectively published outside the IJSB. List No. 64: Gluconacetobacter nom. corrig. (Gluconoacetobacter [sic]). Int. J. Syst. Bacteriol. 48, 327–328.

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2000	Monera	Proteobacteria	Acetobacteraceae	Gluconacetobacter	Gluconacetobacter entanii	Vinegar	Schüller, G., Hertel, C., Hammes, W.P., 2000. Gluconacetobacter entanii sp. nov., a new species isolated from submerged high-acid industrial vinegar fermentations. Int. J. Syst. Evol. Microbiol. 50, 2013–2020.			DSM 13536	Schüller, G., Hertel, C., Hammes, W.P., 2000. Gluconacetobacter entanii sp. nov., a new species isolated from submerged high-acid industrial vinegar fermentations. Int. J. Syst. Evol. Microbiol. 50, 2013–2020.
1998	Monera	Proteobacteria	Acetobacteraceae	Gluconacetobacter	Gluconacetobacter europaeus	Vinegar	Gullo, M., 2008. Acetic acid bacteria in traditional balsamic vinegar: phenotypic traits relevant for starter cultures selection.Int J Food Microbiol. 125, 46-53.			ATCC 51845	Yamada, Y., Hoshino, K.-I., Ishikawa, T., 1998. Validation of publication of new names and new combinations previously effectively published outside the IJSB. List No. 64: Gluconacetobacter nom. corrig. (Gluconoacetobacter [sic]). Int. J. Syst. Bacteriol. 48, 327–328.
1998	Monera	Proteobacteria	Acetobacteraceae	Gluconacetobacter	Gluconacetobacter hansenii	Vinegar	Torija, M.J., 2010. Identification and quantification of acetic acid bacteria in wine and vinegar by TaqMan-MGB probes. Food Microbio. 27, 257-65.			ATCC 35959	Yamada, Y., Hoshino, K.-I., Ishikawa, T., 1998. Validation of publication of new names and new combinations previously effectively published outside the IJSB. List No. 64: Gluconacetobacter nom. corrig. (Gluconoacetobacter [sic]). Int. J. Syst. Bacteriol. 48, 327–328.
2001	Monera	Proteobacteria	Acetobacteraceae	Gluconacetobacter	Gluconacetobacter johannae	Cocoa, Coffee	Fuentes-Ramírez, L.E., Bustillos-Cristales, R., Tapia-Hernandez, A., Jimenez-Salgado, T., Wang, E.T., Martinez-Romero, E., Caballero-Mellado, J., 2001. Novel nitrogen-fixing acetic acid bacteria, Gluconacetobacter johannae sp. nov. and Gluconacetobacter azotocaptans sp. nov., associated with coffee plants. Int. J. Syst. Evol. Microbiol. 51, 1305–1314.			ATCC 700987	Fuentes-Ramírez, L.E., Bustillos-Cristales, R., Tapia-Hernandez, A., Jimenez-Salgado, T., Wang, E.T., Martinez-Romero, E., Caballero-Mellado, J., 2001. Novel nitrogen-fixing acetic acid bacteria, Gluconacetobacter johannae sp. nov. and Gluconacetobacter azotocaptans sp. nov., associated with coffee plants. Int. J. Syst. Evol. Microbiol. 51, 1305–1314.
1998	Monera	Proteobacteria	Acetobacteraceae	Gluconacetobacter	Gluconacetobacter oboediens	Vinegar	Sokollek, S.J., Hertel, C., Hammes, W.P., 1998b. Description of Acetobacter oboediens sp. nov. and Acetobacter pomorum sp. nov., two new species isolated from industrial vinegar fermentations. Int. J. Syst. Bacteriol. 48, 935–940.			DSM 11826	Yamada, Y., 2000. Transfer of Acetobacter oboediens Sokollek et al 1998 and Acetobacter intermedius Boesch et al. 1998 to the genus Gluconacetobacter as Gluconacetobacter oboediens comb. nov. and Gluconacetobacter intermedius comb. nov. Int J Syst Evol Microbiol. 50 Pt 6, 2225-7.
1897	Monera	Proteobacteria	Acetobacteraceae	Gluconobacter	Gluconobacter oxydans	Vinegar	De Muynck, C., 2007. The genus Gluconobacter oxydans: comprehensive overview of biochemistry and biotechnological applications. Crit Rev Biotechnol. 27(3):147-71.			ATCC 19357	(Henneberg 1897) DeLey, J., 1961. Comparative carbohydrate metabolism and a proposal for the phylogenetic relationship of the acetic acid bacteria. J. Gen. Microbiol. 24:31-50.
1998	Monera	Proteobacteria	Acetobacteraceae	Gluconacetobacter	Gluconacetobacter xylinus	Vinegar	Gullo, M., Caggia, C., De Vero, L., Giudici, P., 2006. Characterization of acetic acid bacteria in "traditional balsamic vinegar". Int J Food Microbiol. 106, 209-12.			ATCC 23767	Yamada, Y., Hoshino, K.-I., Ishikawa, T., 1998. Validation of publication of new names and new combinations previously effectively published outside the IJSB. List No. 64: Gluconacetobacter nom. corrig. (Gluconoacetobacter [sic]). Int. J. Syst. Bacteriol. 48, 327–328.
<1996	Monera	Proteobacteria	Enterobacteriaceae	Hafnia	Hafnia alvei	Dairy	Mounier, J., Monnet, C., Vallaeys, T., Arditi, R., Sarthou, A.S., Hélias, A., Irlinger, F., 2008. Microbial interactions within a cheese microbial community. Appl Environ Microbiol. 74, 172-81.			ATCC 13337	Møller, V., 1954. Distribution of amino acid decarboxylases in Enterobacteriaceae. Acta Pathologica et Bacteriologica Scandinavica 35, 259-277.
1980	Monera	Proteobacteria	Enterobacteriaceae	Halomonas	Halomonas elongata	Meat	Hinrichsen, L.L., Montel, M.C., Talon, R., 1994. Proteolytic and lipolytic activities of Micrococcus roseus (65), Halomonas elongata (16) and Vibrio sp. (168) isolated from Danish bacon curing brines. Int J Food Microbiol. 22(2-3), 115-26.			ATCC 33173	Vreeland, R.H., Litchfield, C.D., Martin, E.L., Elliot, E., 1980. Halomonas elongata, a new genus and species of extremely salt-tolerant bacteria. Int. J. Syst. Bacteriol. 30, 485-495. VP. ATCC 33173.
1936	Monera	Proteobacteria	Sphingomonadaceae	Zymomonas	Zymomonas mobilis subsp. mobilis	Beverages	Rogers, P.L., Goodman, A.E., Heyes, R.H., 1984. Zymomonas ethanol fermentations. Microbiol Sci. 1, 133-6.			ATCC 10988	Swings, J., De Ley, J., 1977. The biology of Zymomonas. Bacteriol Rev. 41, 1-46.

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1986	Fungi	Ascomycota	Cordycipitaceae	Lecanicillium	Lecanicillium lecanii	Dairy	Lund, F., Filtenborg, O., Frisvad, J.C., 1995. Associated mycoflora of cheese. Food Microbiology 12, 173-180.			CBS 102067	Zare, R., Gams, W., 2001. A revision of Verticillium section Prostrata. IV. The genera Lecanicillium and Simplicillium. Nova Hedwigia 73, 1-50.
1970	Fungi	Ascomycota	Dipodascaceae	Galactomyces	Galactomyces candidum	Dairy	Castellari C, Quadrelli AM, Laich F.Surface mycobiota on Argentinean dry fermented sausages. Int J Food Microbiol. 2010 142(1-2):149-55 Mounier J, Monnet C, Vallaeys T, Arditi R, Sarthou AS, Hélias A, Irlinger F.Microbial interactions within a cheese microbial community. Appl Environ Microbiol. 2008 74(1):172-81. Pottier I, Gente S, Vernoux JP, Guéguen M.Safety assessment of dairy microorganisms: Geotrichum candidum.Int J Food Microbiol. 2008 126(3):327-32. BARTSCHI C, BERTHIER J, VALLA G. Inventaire et évolution des flores fongiques de surface du reblochon de Savoie. Le Lait, 1994, 74(2), 105-114 Gueguen M, Lenoir J. Aptitude de l'espèce Geotrichum candidum à la production d'enzymes protéolytiques. Le Lait 1975, 55 (543-544) 145-162 Besançon X, Smet C, Chabalier C, Rivemale M, Reverbel JP, Ratomahenina R, Galzy P. Study of surface yeast flora of Roquefort cheese. Int. J. Food Micorbiol., 1992, 17(1), 9-18			CBS 178,71	Mounier J, Le Blay G, Vasseur V, Le Floch G, Jany JL, Barbier G., 2010. Application of denaturing high-performance liquid chromatography (DHPLC) for yeasts identification in red smear cheese surfaces. Lett Appl Microbiol. 51(1):18-23.
1970	Fungi	Ascomycota	Dipodascaceae	Geotrichum	Geotrichum candidum	Dairy, Meat	Castellari, C., Quadrelli, A.M., Laich, F., 2010. Surface mycobiota on Argentinean dry fermented sausages. Int J Food Microbiol. 142, 149-55. Mounier, J., Monnet, C., Vallaeys, T., Arditi, R., Sarthou, A.S., Hélias, A., Irlinger, F., 2008. Microbial interactions within a cheese microbial community. Appl Environ Microbiol. 74, 172-81. Pottier, I., Gente, S., Vernoux, J.P., Guéguen, M., 2008. Safety assessment of dairy microorganisms: Geotrichum candidum.Int J Food Microbiol. 126, 327-32. Bartschi, C., Berthier, J., Valla, G., 1994. Inventaire et évolution des flores fongiques de surface du reblochon de Savoie. Le Lait 74, 105-114. Gueguen M, Lenoir J. Aptitude de l'espèce Geotrichum candidum à la production d'enzymes protéolytiques. Le Lait 1975, 55 (543-544) 145-162 Besançon X, Smet C, Chabalier C, Rivemale M, Reverbel JP, Ratomahenina R, Galzy P. Study of surface yeast flora of Roquefort cheese. Int. J. Food Micorbiol., 1992, 17(1), 9-18 Mounier J, Le Blay G, Vasseur V, Le Floch G, Jany JL, Barbier G.Application of denaturing high-performance liquid chromatography (DHPLC) for yeasts identification in red smear cheese surfaces.Lett Appl Microbiol. 2010 Jul;51(1):18-23.			CBS 615,84	De Hoog, G.S., Smith, M.T., 2004. Ribosomal gene phylogeny and species delimitation in Geotrichum and its teleomorphs. Stud Mycol 50, 489–515.
1951	Fungi	Ascomycota	Dipodascaceae	Yarrowia	Yarrowia lipolytica	Dairy	Boekhout, T., Robert, V., (Eds.), 2003. Yeasts in food: Beneficial and detrimental aspects. Behr's Verlag, Hamburg.			CBS 6124	Walt, J.P. van der; von Arx, J.A., 1980. The yeast genus Yarrowia gen. nov. Antonie van Leeuwenhoek 46, 517-521.

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1963	Fungi	Ascomycota	Microascaceae	Scopulariopsis	Scopulariopsis flava	Dairy	Spotti, E., Berni, E., Cacchioli, C., 2008. Characteristics and Applications of Molds. Meat Biotechnology Part II, 181-195, MOREAU, C., 1979. Nomenclature des Penicillium utiles à la préparation du Camembert. Lait 59 219-233			CBS 207.61	Morton, F.J.; Smith, G., 1963, Mycological Papers 86: 1-96.
2009	Fungi	Ascomycota	Nectriaceae	Fusarium	Fusarium domesticum	Dairy	Ratomahenina, R., Van den Booms, S., Galzy, P., Dieu, B., 1995. Study of growth parameters of Cylindrocarpon sp., a mould isolated from "saint nectaire" cheese. Chem Mikrobiol Technol Lebens 17, 169-171.			CBS 434,34	Schroers, H.J., O'Donnell, K., Lamprecht, S.C., Kammeyer, P.L., Johnson, S., Sutton, D.A., Rinaldi, M.G., Geiser D.M., Summerbell, R.C., 2009. Taxonomy and phylogeny of the Fusarium dimerum species group. Mycologia 101, 44-70.
1875	Fungi	Ascomycota	Nectriaceae	Fusarium	Fusarium venenatum	Dairy	Thrane, U., 2007. Fungal protein for food. In: Dijksterhuis, J., Samson., R.A. (Eds.), Food Mycology. A multifaceted approach to fungi and food. CRC Press, Boca Raton, pp. 353-360.			CBS 5421	Nirenberg, H.I., 1995. Morphological differentiation of Fusarium sambucinum Fuckel sensu stricto, F. torulosum (Berk. & Curt.) Nirenberg comb. nov. and F. venenatum Nirenberg sp. nov. Mycopathologia 129, 131-141.
2006	Fungi	Ascomycota	Saccharomycetaceae	Candida	Candida etchellsii	Dairy, Soy, Vegetables	Coton E, Coton M, Levert D, Casaregola S, Sohier D, 2006. Yeast ecology in French cider and black olive natural fermentations. Int J Food Microbiol. Apr 15;108(1):130-5.			CBS 1750	Suezawa Y,Kimura I,Inoue M, Gohda N, Suzuki M, 2006. Identification and typing of miso and soy sauce fermentation yeasts, Candida etchellsii and C. versatilis, based on sequence analyses of the D1D2 domain of the 26S ribosomal RNA gene, and the region of internal transcribed spacer 1, 5.8S ribosomal RNA gene and internal transcribed spacer 2. Biosci Biotechnol Biochem
1978	Fungi	Ascomycota	Saccharomycetaceae	Candida	Candida milleri	Sourdough	Valmorri, S., 2010. Yeast microbiota associated with spontaneous sourdough fermentations in the production of traditional wheat sourdough breads of the Abruzzo region (Italy). Antonie Van Leeuwenhoek 97(2):119-29.			ATCC 56464	Yarrow, D., 1978. Candida milleri sp. nov. Int J Syst Bacteriol 28, 608-610
1967	Fungi	Ascomycota	Saccharomycetaceae	Candida	Candida oleophila	Wine	Droby, S., Cohen, L., Davis, A., Weiss, B., Hores, B., Chalutz, E., Kotz, H., Kerantzur, M., Shachnai, A., 1998. Commercial testing of Aspire: a yeast preparation for the biological control of postharvest decay of citrus. Biol. Control 12, 97-101			CBS 2219	Montrocher, R., 1967. [Quelques nouvelles espèces et variétés du genre Candida (Levures asporogènes)]. Rev Mycol 32 69-92
1942	Fungi	Ascomycota	Saccharomycetaceae	Candida	Candida rugosa	Dairy	Seiler, H., Busse, M., 1990. The yeasts of cheese brines. Int J Food Microbiol. 11(3-4):289-303.			CBS 613	Diddens, H.A., Lodder, J., 1942. [Asporogenous Yeasts] Vol2 1-511
1923	Fungi	Ascomycota	Saccharomycetaceae	Candida	Candida tropicalis	Vegetables	Coulin, P., Farah, Z., Assanvo, J., Spillmann, H., Puhan, Z., 2006. Characterisation of the microflora of attiéké, a fermented cassava product, during traditional small-scale preparation. Int J Food Microbiol 106 131–6			ATCC 4563	Berkhout, C.M., 1923. De schimmelgeslachten Monilia, Oidium, Oospora en Torula: 44
1942	Fungi	Ascomycota	Saccharomycetaceae	Candida	Candida versatilis	Dairy, Soy	Seiler H, Busse M. 1990. The yeasts of cheese brines. Int J Food Microbiol. 11:289-303. van der Sluis C, Mulder AN, Grolle KC, Engbers GH, ter Schure EG, Tramper J, Wijffels RH. 2000. Immobilized soy-sauce yeasts: development and characterization of a new polyethylene-oxide support. J Biotechnol. 80:179-88. Suezawa Y, Suzuki M. 2007. Bioconversion of Ferulic Acid to 4-Vinylguaiacol and 4-Ethylguaiacol and of 4-Vinylguaiacol to 4-Ethylguaiacol by Halotolerant Yeasts Belonging to the Genus Candida. Biosci Biotechnol Biochem. 71:1058-62. Identification and typing of miso and soy sauce fermentation yeasts, Candida etchellsii and C. versatilis, based on sequence analyses of the D1D2 domain of the 26S ribosomal RNA gene, and the region of internal transcribed spacer 1, 5.8S ribosomal RNA gene and internal transcribed spacer 2. Suezawa Y, Kimura I, Inoue M, Gohda N, Suzuki M. Biosci Biotechnol Biochem. 2006			CBS 1752	Lodder & Kreger-van Rij 1984, The Yeast: a Taxonomie Study. p.831

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2003	Fungi	Ascomycota	Saccharomycetaceae	Candida	Candida zemplinina	Wine	Urso, R., Rantsiou, K., Dolci, Rolle, L., Comi, G., Cocolin, L., 2008. Yeast biodiversity and dynamics during sweet wine production as determined by molecular methods. FEMS Yeast Res 8 1053–1062			CBS 9494	Sipiczki, M., 2003. Candida zemplinina sp. nov., an osmotolerant and psychrotolerant yeast that ferments sweet botrytized wines. Int J System Evol Microbiol 53: 2079–2083.
2008	Fungi	Ascomycota	Saccharomycetaceae	Candida	Candida zeylanoides	Dairy	Seiler H, Busse, M., 1990. The yeasts of cheese brines. Int. J. Food Microbiol., 11(3-4), 289-303			CBS 519	Tsui, T.H.M., Daniel, H.M., Robert, V., Meyer, W., 2008. Re-examining the phylogenyof clinically relevant Candida species and allied genera based on multigene analyses. FEMS Yeast Res 8 651–659 Kurtzman, C.P., Suzuki, M., 2010. Phylogenetic analysis of ascomycete yeasts that form coenzyme Q-9 and the proposal of the new genera Babjeviella, Meyerozyma, Millerozyma, Priceomyces, and Scheffersomyces. Mycoscience 51, 2-14
1950	Fungi	Ascomycota	Saccharomycetaceae	Candida	Pichia kudriavzevii	Dairy, Cocoa	Wilfrid Padonou S, Nielsen DS, Hounhouigan JD, Thorsen L, Nago MC, Jakobsen M, 2009.The microbiota of Lafun, an African traditional cassava food product. Int J Food Microbiol. Jul 31;133(1-2):22-30. Daniel HM, Vrancken G, Takrama JF, Camu N, De Vos P, De Vuyst L, 2009.Yeast diversity of Ghanaian cocoa bean heap fermentations.FEMS Yeast Res. 2009 Aug;9(5):774-83. Bai M, Qing M, Guo Z, Zhang Y, Chen X, Bao Q, Zhang H, Sun TS, 2010. Occurrence and dominance of yeast species in naturally fermented milk from the Tibetan Plateau of China. Can J Microbiol. Sep;56(9):707-14. Li SS, Cheng C, Li Z, Chen JY, Yan B, Han BZ, Reeves M.Yeast species associated with wine grapes in China, 2010. Int J Food Microbiol. Mar 31;138(1-2):85-90. El-Sharoud WM, Belloch C, Peris D, Querol A, 2009. Molecular identification of yeasts associated with traditional Egyptian dairy products.J Food Sci. Sep;74(7):M341-6.19. Abdelgadir W, Nielsen DS, Hamad S, Jakobsen M, 2008. A traditional Sudanese fermented camel's milk product, Gariss, as a habitat of Streptococcus infantarius subsp. infantarius.Int J Food Microbiol. Oct 31;127(3):215-9. Osorio-Cadavid E, Chaves-López C, Tofalo R, Paparella A, Suzzi G, 2008. Detection and identification of wild yeasts in Champús, a fermented Colombian maize beverage. Food Microbiol. Sep;25(6):771-7. E			CBS 5147	Kurtzman, C.P., Robnett, C.J., Basehoar-Powers, E., 2008. Phylogenetic relationships among species of Pichia, Issatchenkia and Williopsis determined from multigene sequence analysis, and the proposal of Barnettozyma gen. nov., Lindnera gen. nov. and Wickerhamomyces gen. nov. FEMS Yeast Res. (6):939-54.
2008	Fungi	Ascomycota	Saccharomycetaceae	Candida	Pichia occidentalis	Dairy, Vegetables	Ongol, M.P., Asano, K., 2009. Main microorganisms involved in the fermentation of Ugandan ghee. Int J Food Microbiol. 2009 Aug 15;133(3):286-91. Arroyo-López, F.N., Durán-Quintana, M.C., Ruiz-Barba, J.L., Querol, A., Garrido-Fernández, A., 2006. Use of molecular methods for the identification of yeast associated with table olives. Food Microbiol. Dec;23(8):791-6. Seiler, H., Busse, M., 1990. The yeasts of cheese brines. Int. J. Food Micorbiol., 11(3-4), 289-303			CBS 5459	Kurtzman, C.P., Robnett, C.J., Basehoar-Powers, E., 2008. Phylogenetic relationships among species of Pichia, Issatchenkia and Williopsis determined from multigene sequence analysis, and the proposal of Barnettozyma gen. nov., Lindnera gen. nov. and Wickerhamomyces gen. nov. FEMS Yeast Res. (6):939-54.
1932	Fungi	Ascomycota	Saccharomycetaceae	Cyberlindnera	Cyberlindnera jadinii	Dairy	Thrane, U., 2007. Fungal protein for food. In: Dijksterhuis, J., Samson, R.A. (Eds.), Food Mycology. A multifaceted approach to fungi and food. CRC Press, Boca Raton, pp. 353-360.			CBS 5609	Minter, D.W., 2009. Cyberlindnera, a replacement name for Lindnera Kurtzman et al., nom. illegit. Mycotaxon. 110, 473-476.
1950	Fungi	Ascomycota	Saccharomycetaceae	Cyberlindnera	Cyberlindnera mrakii	Wine	Erten, H., Tanguler, H., 2010. Influence of Williopsis saturnus yeasts in combination with Saccharomyces cerevisiae on wine fermentation. Lett Appl Microbiol. 50, 474-9.			CBS 1707	Kurtzman, C.P., Robnett, C.J., 2010. Systematics of methanol assimilating yeasts and neighboring taxa from multigene sequence analysis and the proposal of Peterozyma gen. nov., a new member of the Saccharomycetales. FEMS Yeast Res. 10, 353-61.

Documented	Kingdom	Phylum	Family	Genus	Taxonomy	Food Usage	Reference Food Usage	QPS	Danish List	Type Strain	Reference Taxonomy
<1996	Fungi	Ascomycota	Saccharomycetaceae	Debaryomyces	Debaryomyces hansenii	Dairy, Meat	Bartschi, C., Berthier, J., Valla, G., 1994. Inventaire et évolution des flores fongiques de surface du reblochon de Savoie. Le Lait 74, 105-114. Besançon, X., Smet, C., Chabalier, C., Rivemale, M., Reverbel, J.P., Ratomahenina, R., Galzy, P., 1992. Study of surface yeast flora of Roquefort cheese . Int. J. Food Micorbiol. 17, 9-18. Besancon, X., Ratomahenina, R., Galzy, P., 1995. Isolation and partial characterization of an esterase (EC 3.1.1.1) from a Debaryomyces hansenii strain. Nederlands melk en Zuiveltijdschrift 49, 97-110.			CBS 767	Jacques, N., Mallet, S., Casaregola, S., 2009. Delimitation of the species of the Debaryomyces hansenii complex by intron sequence analysis. Int J Syst Evol Microbiol. 59(Pt 5), 1242-51. Jacques, N., Sacerdot, C., Derkaoui, M., Dujon, B., Ozier-Kalogeropoulos, O., Casaregola, S., 2010. Population polymorphism of nuclear mitochondrial DNA insertions reveals widespread diploidy associated with loss of heterozygosity in Debaryomyces hansenii. Eukaryot Cell. 9, 449-59. Kurtzman, C.P., Suzuki, M., 2010. Phylogenetic analysis of ascomycete yeasts that form coenzyme Q-9 and the proposal of the new genera Babjeviella, Meyerozyma, Millerozyma, Priceomyces, and Scheffersomyces. Mycoscience 51, 2-14.
1964	Fungi	Ascomycota	Saccharomycetaceae	Dekkera	Dekkera bruxellensis	Beverages	Boekhout, T., Robert, V. (Eds.), 2003. Yeasts in food: Beneficial and detrimental aspects. Behr's Verlag, Hamburg.			CBS 74	Walt, J.P. van der, 1964. Dekkera, a new genus of the Saccharomycetaceae. Antonie van Leeuwenhoek 30, 273-280.
1928	Fungi	Ascomycota	Saccharomycetaceae	Hanseniaspora	Hanseniaspora guilliermondii	Wine	Moreira, N., Mendes, F., Guedes de Pinho, P., Hogg, T., Vasconcelos, I., 2008. Heavy sulphur compounds, higher alcohols and esters production profile of Hanseniaspora uvarum and Hanseniaspora guilliermondii grown as a pure and mixed cultures in grape must. Int J Food Microbiol 124: 231–238.			CBS 465	Pijper, A., 1928. [A new Hanseniaspora] Verhandelingen, Koninklijke Nederlandse Akademie van Wetenschappen, Afdeling Natuurkunde 37 868-871
1956	Fungi	Ascomycota	Saccharomycetaceae	Hanseniaspora	Hanseniaspora osmophila	Wine	Viana, F., Gil, J.V., Genovés, S., Vallés, S., Manzanares, P., 2008. Rational selection of non-Saccharomyces wine yeasts for mixed starters based on ester formation and enological traits. Food Microbiol 25: 778–785.			CBS 313	Phaff, H.J., Miller, M.W., Shifrine, M., 1956. The taxonomy of yeasts isolated from Drosophila in the Yosemite region of California. Antonie van Leeuwenhoek 22 145-161
1923	Fungi	Ascomycota	Saccharomycetaceae	Hanseniaspora	Hanseniaspora uvarum	Wine	Moreira, N., Mendes, F., Guedes de Pinho, P., Hogg, T., Vasconcelos, I., 2008. Heavy sulphur compounds, higher alcohols and esters production profile of Hanseniaspora uvarum and Hanseniaspora guilliermondii grown as a pure and mixed cultures in grape must. Int J Food Microbiol 124: 231–238.			CBS 314	Kreger-van Rij, N.J.W., 1984. The Yeasts: a taxonomic study Edition#3 1-1082
1986	Fungi	Ascomycota	Saccharomycetaceae	Kazachstania	Kazachstania exigua	Dairy, Sourdough	Zhou, J., Liu, X., Jiang, H., Dong, M., 2009. Analysis of the microflora in Tibetan kefir grains using denaturing gradient gel electrophoresis. Food Microbiol. 26, 770-5. Ottogalli, G., Galli, A., Foschino, R., 1996. Italian bakery products obtained with sour dough : Characterization of the typical microflora. Advances in food sciences 18, 131-144.			CBS 379	Kurtzman, C.P., Robnett, C.J., 2003. Phylogenetic relationships among yeasts of the 'Saccharomyces complex' determined from multigene sequence analyses. FEMS Yeast Res. 3, 417-32. Kurtzman, C.P., 2003. Phylogenetic circumscription of Saccharomyces, Kluyveromyces and other members of the Saccharomycetaceae, and the proposal of the new genera Lachancea, Nakaseomyces, Naumovia, Vanderwaltozyma and Zygotorulaspora. FEMS Yeast Res. 4, 233-45.
1986	Fungi	Ascomycota	Saccharomycetaceae	Kazachstania	Kazachstania unispora	Dairy	Zhou, J., Liu, X., Jiang, H., Dong, M., 2009. Analysis of the microflora in Tibetan kefir grains using denaturing gradient gel electrophoresis. Food Microbiol. 26, 770-5. Wang, S.Y., Chen, H.C., Liu, J.R., Lin, Y.C., Chen, M.J., 2008. Identification of Yeasts and Evaluation of their Distribution in Taiwanese Kefir and Viili Starters. J Dairy Sci. 91, 3798-3805.			CBS398	Kurtzman, C.P., Robnett, C.J., 2003. Phylogenetic relationships among yeasts of the 'Saccharomyces complex' determined from multigene sequence analyses. FEMS Yeast Res. 3, 417-32. Kurtzman, C.P., 2003. Phylogenetic circumscription of Saccharomyces, Kluyveromyces and other members of the Saccharomycetaceae, and the proposal of the new genera Lachancea, Nakaseomyces, Naumovia, Vanderwaltozyma and Zygotorulaspora. FEMS Yeast Res. 4, 233-45.

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1950	Fungi	Ascomycota	Saccharomycetaceae	Kluyveromyces	Kluyveromyces marxianus	Dairy	Roostita, R., Fleet, G.H., 1996. The occurrence and growth of yeasts in Camembert and Blue-veined cheeses. Int. J. Food Micorbiol. 28, 393-404.			CBS 712	Kurtzman, C.P., Robnett, C.J., 2003. Phylogenetic relationships among yeasts of the 'Saccharomyces complex' determined from multigene sequence analyses. FEMS Yeast Res. 3, 417-32. Kurtzman, C.P., 2003. Phylogenetic circumscription of Saccharomyces, Kluyveromyces and other members of the Saccharomycetaceae, and the proposal of the new genera Lachancea, Nakaseomyces, Naumovia, Vanderwaltozyma and Zygotorulaspora. FEMS Yeast Res. 4, 233-45.
1980	Fungi	Ascomycota	Saccharomycetaceae	Kluyveromyces	Kluyveromyces lactis	Dairy	Roostita, R., Fleet, G.H., 1996. The occurrence and growth of yeasts in Camembert and Blue-veined cheeses. Int. J. Food Micorbiol. 28, 393-404. Jacques, N., Casaregola, S., 2008. Safety assessment of dairy microorganisms: the hemiascomycetous yeasts. Int J Food Microbiol. 126, 321-6. Dujon, B. et al., 2004. Genome evolution in yeasts. Nature 430, 35-44.			CBS 683	Kurtzman, C.P., Robnett, C.J., 2003. Phylogenetic relationships among yeasts of the 'Saccharomyces complex' determined from multigene sequence analyses. FEMS Yeast Res. 3, 417-32. Kurtzman, C.P., 2003. Phylogenetic circumscription of Saccharomyces, Kluyveromyces and other members of the Saccharomycetaceae, and the proposal of the new genera Lachancea, Nakaseomyces, Naumovia, Vanderwaltozyma and Zygotorulaspora. FEMS Yeast Res. 4, 233-45.
1928	Fungi	Ascomycota	Saccharomycetaceae	Lachancea	Lachancea fermentati	Wine	Romano, P., Suzzi, G., Domizio, P., Fatichenti, F., 1997. Secondary products formation as a tool for discriminating non-Saccharomyces wine strains. Strain diversity in non-Saccharomyces wine yeasts. Antonie Van Leeuwenhoek. 71(3):239-42.			CBS 707	Kurtzman, CP., 2003. Phylogenetic circumscription of Saccharomyces, Kluyveromyces and other members of the Saccharomycetaceae, and the proposal of the new genera Lachancea, Nakaseomyces, Naumovia, Vanderwaltozyma and Zygotorulaspora. FEMS Yeast Res 4 233-245.
1940	Fungi	Ascomycota	Saccharomycetaceae	Metschnikowia	Metschnikowia pulcherrima	Wine	Charoenchai, C., Fleet, G.H., Henscke, P.A., Todd, B.E.N., 1997. Screening of non-Saccharomyces wine yeasts for the presene of extracellular hydrolytic enzymes. Aust. J. grape Wine Res. 3, 2-8			CBS 610	Pitt, J.I., Miller, M.W., 1968. Sporulation in Candida pulcherrima, Candida reukaufii and Chlamydozyma species: their relationships with Metschnikowia. Mycologia 60 (3) 663-85
<1996	Fungi	Ascomycota	Saccharomycetaceae	Pichia	Pichia fermentans	Dairy, Wine	Qing, M., Bai, M., Zhang, Y., Liu, W., Sun, Z., Zhang, H., Sun, T., 2010. Identification and biodiversity of yeasts from Qula in Tibet and milk cake in Yunnan of China. Wei Sheng Wu Xue Bao. 50, 1141-6. Bai, M., Qing, M., Guo, Z., Zhang, Y., Chen, X., Bao, Q., Zhang, H., Sun, T.S., 2010. Occurrence and dominance of yeast species in naturally fermented milk from the Tibetan Plateau of China. Can J Microbiol. 56, 707-14. Stringini, M., Comitini, F., Taccari, M., Ciani, M., 2009. Yeast diversity during tapping and fermentation of palm wine from Cameroon. Food Microbiol. 26, 415-20. Wang, S.Y., Chen, H.C., Liu, J.R., Lin, Y.C., Chen, M.J., 2008. Identification of yeasts and evaluation of their distribution in Taiwanese Kefir and Viili starters. J Dairy Sci. 91, 3798-3805. Rantsiou, K., Urso, R., Dolci, P., Comi, G., Cocolin, L., 2008. Microflora of Feta cheese from four Greek manufacturers. J Dairy Sci. 91, 3798-805.			CBS187	Kurtzman, C.P., Robnett, C.J., 2003. Phylogenetic relationships among yeasts of the 'Saccharomyces complex' determined from multigene sequence analyses. FEMS Yeast Res. 3, 417-32. Kurtzman, C.P., 2003. Phylogenetic circumscription of Saccharomyces, Kluyveromyces and other members of the Saccharomycetaceae, and the proposal of the new genera Lachancea, Nakaseomyces, Naumovia, Vanderwaltozyma and Zygotorulaspora. FEMS Yeast Res. 4, 233-45.

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<1989	Fungi	Ascomycota	Saccharomycetaceae	Pichia	Pichia kluyverii	Wine	Pando I, Garcia M. J., Zuniga M, and Uruburu F.: Dynamics of Microbial Populations during Fermentation of Wines from the Utiel-Requena Region of Spain. Applied and Environmental Microbiology. 1989, Feb. 539-541 Guillamón J. M., Sabaté J., Barrio E., and Cano J.: Amparo QuerolRapid identification of wine yeast species based on RFLP analysis of the ribosomal internal transcribed spacer (ITS) region. Arch Microbiol 1998, 169 : 387–392 Anfang N., Brajkovich M. and Goddard M. R.: Co-fermentation with Pichia kluyveri increases varietal thiol concentrations in Sauvignon Blanc. Australian Journal of Grape and Wine Research 2009, 15, 1–8		(Y) notified late 2010	CBS 188	Kurtzman,C.P.;Robnett,C.J. Identification and phylogeny of ascomycetous yeasts from analysis of nuclear large subunit (26S) ribosomal DNA partial sequences. Antonie van Leeuwenhoek 1999, Vol. 73, 331-71
<1996	Fungi	Ascomycota	Saccharomycetaceae	Pichia	Pichia membranifaciens	Dairy	Shepherd, R., Rockey, J., Sutherland, I.W., Roller, S., 1995. Novel bioemulsifiers from microorganisms for use in foods. J Biotechnol. 40, 207-217.			CBS 107	Kurtzman, C.P., Robnett, C.J., Basehoar-Powers, E., 2008. Phylogenetic relationships among species of Pichia, Issatchenkia and Williopsis determined from multigene sequence analysis, and the proposal of Barnettozyma gen. nov., Lindnera gen. nov. and Wickerhamomyces gen. nov. FEMS Yeast Res. 8, 939-54.
<2000	Fungi	Ascomycota	Saccharomycetaceae	Pichia	Pichia pijperi	Wine	Zagorc T., Maraz A., Cadez N., Povhe Jemec K., Peter G., Resnik M., Nemanic J. and Raspor P.: Indigenous wine killer yeast and therir application as a starter culture in wine fermentation. Food Micro. 2001, 18, 441-451			CBS 2887	Van der Walt,J.P.,Tscheuschner,I.T.Three new yeasts. Antonie van Leeuwenhoek, 1957, Vol. 23, 184-190
1950	Fungi	Ascomycota	Saccharomycetaceae	Saccharomyces	Saccharomyces bayanus	Wine, Beverages	Rainieri, S., Kodama, Y., Kaneko, Y., Mikata, K., Nakao, Y. Ashikari, T., 2006. Pure and mixed genetic lines of Saccharomyces bayanus and Saccharomyces pastorianus and their contribution to the lager brewing strain genome. Appl Envir Microbiol 72, 3968-3974.			CBS395	Kurtzman, C.P., Robnett, C.J., 2003. Phylogenetic relationships among yeasts of the 'Saccharomyces complex' determined from multigene sequence analyses. FEMS Yeast Res. 3, 417-32. Kurtzman, C.P., 2003. Phylogenetic circumscription of Saccharomyces, Kluyveromyces and other members of the Saccharomycetaceae, and the proposal of the new genera Lachancea, Nakaseomyces, Naumovia, Vanderwaltozyma and Zygotorulaspora. FEMS Yeast Res. 4, 233-45.
1980	Fungi	Ascomycota	Saccharomycetaceae	Saccharomyces	Saccharomyces cerevisiae	Dairy, Wine, Beverages	Roostita, R., Fleet, G.H., 1996. The occurrence and growth of yeasts in Camembert and Blue-veined cheeses. Int. J. Food Micorbiol. 28, 393-404.			CBS1171	Kurtzman, C.P., Robnett, C.J., 2003. Phylogenetic relationships among yeasts of the 'Saccharomyces complex' determined from multigene sequence analyses. FEMS Yeast Res. 3, 417-32. Kurtzman, C.P., 2003. Phylogenetic circumscription of Saccharomyces, Kluyveromyces and other members of the Saccharomycetaceae, and the proposal of the new genera Lachancea, Nakaseomyces, Naumovia, Vanderwaltozyma and Zygotorulaspora. FEMS Yeast Res. 4, 233-45.
1934	Fungi	Ascomycota	Saccharomycetaceae	Saccharomyces	Torulopsis candida	Vegetables	Soni, S.K., Sandhu, D.K., Vikhu, K.S., Karma, N., 1986. Microbiological studies on dosa fermentation. Food Microbiol 3: 45–53.			CBS 940	Diddens, H.A., Lodder, J., 1934. [Asporogenous Yeasts] Vol1 1-256
1934	Fungi	Ascomycota	Saccharomycetaceae	Saccharomyces	Torulopsis holmii	Vegetables	Batra, L. R. and Millner, P. D., 1974. Some Asian fermented foods and beverages and associated fungi. Mycologia, 66, 942-950.			CBS 135	Diddens, H.A., Lodder, J., 1934. [Asporogenous Yeasts] Vol1 1-256
1963	Fungi	Ascomycota	Saccharomycetaceae	Schwanniomyces	Schwanniomyces vanrijiae	Wine	Garcia, A., Carcel, C., Dalau, L., Samson, A., Aguera, E., Agosin, E., Gunata, Z., 2002. Influence of a mixed culture with Debaryomyces vanriji and Saccharomyces cerevisiae on the volatiles in a Muscat wine. J Food Sci 67: 1138–1143.			CBS 3024	Kurtzman, C.P., Suzuki, M., 2010. Phylogenetic analysis of ascomycete yeasts that form coenzyme Q-9 and the proposal of the new genera Babjeviella, Meyerozyma, Millerozyma, Priceomyces, and Scheffersomyces. Mycoscience 51: 2-14.

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1978	Fungi	Ascomycota	Saccharomycetaceae	Starmerella	Starmerella bombicola	Wine	Ciani, M., Maccarelli, F., 1998. Oenological properties of non-Saccharomyces yeasts associated with winemaking. World J Microb Biot 14: 199–203.			CBS 6009	Rosa,C.A., Lachance, M.A., 1998. The yeast genus Starmerella gen. nov. and Starmerella bombicola comb. nov., the teleomorph of Candida bombicola (Spencer, Gorin et Tullock) Meyer et Yarrow. Int J Syst Evol Microbiol 48 1413-1417.
1978	Fungi	Ascomycota	Saccharomycetaceae	Trigonopsis	Trigonopsis cantarellii	Wine	Toro, M.E., Vazquez, F., 2002. Fermentation behaviour of controlled mixed and sequential cultures of Candida cantarellii and Saccharomyces cerevisiae wine yeasts. World J Microb Biot 18: 347–354.			ATCC 36588	Kurtzman, C.P., Robnett, C.J., 2007.Multigene phylogenetic analysis of theTrichomonascus , Wickerhamiella and Zygoascus yeast clades, and the proposal of Sugiyamaella gen.nov. and14 newspecies combinations. FEMS Yeast Res 7 141–151
1904	Fungi	Ascomycota	Saccharomycetaceae	Wickerhamomyces	Wickerhamomyces anomalus	Wine	Kurita, O., 2008. Increase of acetate ester-hydrolysing esterase activity in mixed cultures of Saccharomyces cerevisiae and Pichia anomala. J Appl Microbiol 104: 1051–1058.			CBS 5759	Kurtzman, C. P., Robnett, C. J. , Basehoar-Powers, E., 2008. Phylogenetic relationships among species of Pichia, Issatchenkia and Williopsis determined from multigene sequence analysis, and the proposal of Barnettozyma gen. nov., Lindnera gen. nov. and Wickerhamomyces gen. nov. FEMS Yeast Res 8:939-54
1952	Fungi	Ascomycota	Saccharomycetaceae	Zygosacharomyces	Zygosaccharomyces rouxii	Soy	Hesseltine C. W. and Shibasaki K. 1961.MisoIII. Pure Culture Fermentation with Saccharomyces rouxii. Appl Microbiol. 9: 515–518 Suezawa Y, Suzuki M. Mori H. 2008. Genotyping of a Miso and Soy Sauce Fermentation Yeast, Zygosaccharomyces rouxii, Based on Sequence Analysis of the Partial 26S Ribosomal RNA Gene and Two Internal Transcribed Spacers, Biosci Biotechnol Biochem. 72:2452-5. Strain typing of Zygosaccharomyces yeast species using a single molecular method based on polymorphism of the intergenic spacer region (IGS). Wrent P, Rivas EM, Peinado JM, de Silóniz MI. Int J Food Microbiol. 2010 Aug 15;142(1-2):89-96. 10. Analysis of bacterial and fungal communities in Japanese- and Chinese-fermented soybean pastes using nested PCR-DGGE. Kim TW, Lee JH, Park MH, Kim HY. Curr Microbiol. 2010 May;60(5):315-20Génolevures Consortium, Comparative genomics of protoploid Saccharomycetaceae.Genome Res. 2009 Oct;19(10):1696-709. Genotyping of a miso and soy sauce fermentation yeast, Zygosaccharomyces rouxii, based on sequence analysis of the partial 26S ribosomal RNA gene and two internal transcribed spacers. Suezawa Y, Suzuki M, Mori H. Biosci Biotechnol Biochem. 2008 Sep;72(9):2452-5.Yeasts associated to Traditional Balsamic Vinegar: ecological and technological features.			CBS 732	Lodder & Kreger-van Rij 1984, The Yeast: a Taxonomie Study p.462
1938	Fungi	Ascomycota	Saccharomycetaceae	Zygotorulaspora	Zygotorulaspora florentina	Dairy	Boekhout, T., Robert, V., (Eds.), 2003. Yeasts in food: Beneficial and detrimental aspects. Behr's Verlag, Hamburg.			CBS 647	Kurtzman, C.P., Fell, J.W., Boekhout, T., 2011. The Yeasts: A Taxonomic Study, 5th edition. 3 Vol. Amsterdam: Elsevier Science & Technology.
1983	Fungi	Ascomycota	Saccharomycetaceae	Lachancea	Lachancea thermotolerans	Wine	Pando I, Garcia M. J., Zuniga M, and Uruburu F.: Dynamics of Microbial Populations during Fermentation of Wines from the Utiel-Requena Region of Spain. Applied and Environmental Microbiology. 1989, Feb. 539-541 Gonzalez S.S., Barrio E. and Querol A.: Molecular identification and characterization of wine yeasts isolated from Tenerife. Journal of Applied Microbiology 2007, 102, 1018-1025.		Y	CBS 6340	Jacquier A, Dujon B. (1983). "The intron of the mitochondrial 21S rRNA gene: distribution in different yeast species and sequence comparison between Kluyveromyces thermotolerans and Saccharomyces cerevisiae." Mol Gen Genet 192(3):487-99.

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<1988	Fungi	Ascomycota	Sarcosomataceae	Torulaspora	Torulaspora delbrueckii	Dairy, Wine	Westall, S., Filreenborg ,O., 1998. Yeast occurance in Danish feta cheeses. Food Micro. 15, 215-222. Wyder, T.M., Spillmann, H., Puhan, Z., 1997. Investigation of yeast flora in dairy products. Food technol. biotechnol. 35, 4, 299-304. Pando, I., Garcia, M.J., Zuniga, M., Uruburu, F., 1989. Dynamics of Microbial Populations during Fermentation of Wines from the Utiel-Requena Region of Spain. App. and Env. Microbiol. 539-541		Y	CLIB 230	Oda, Y., Yabuki, M., Tonomura, K., Fukunaga, M., 1997. Reexamination of Yeast Strains Classified as Torulaspora delbrueckii (Lindner). Int J Syst Bacteriol 47, 1102-1106
1893	Fungi	Ascomycota	Schizosaccharomycetaceae	Schizosaccharomyces	Schizosaccharomyces pombe	Wine	Snow, P.G., Gallender, G.F., 1979. Deacidification of white table wines through partial fermentation by Schizosaccharomyces pombe. Am J Enol Viticult 30: 45–48.			CBS 356	Lindner, P., 1893. [Schizosaccharomyces pombe n. sp., a new starter] Wochenschrift für Brauerei 10 1298-1300
1927	Fungi	Ascomycota	Sordariaceae	Neurospora	Neurospora sitophila	Vegetables	Essers, A.J., Ebong, C., van der Grift, R.M., Nout, M.J., Otim-Nape, W., Rosling, H., 1995. Reducing cassava toxicity by heap-fermentation in Uganda. Int J Food Sci Nutr. 46(2):125-36.			CBS 381.50	Shear, G.L., Dodge, B.O., 1927. Life histories and heterothallism of the red bread-mold fungi of the Monilia sitophila group. J Agri Res 34(11) 1019-1041
1968	Fungi	Ascomycota	Trichocomaceae	Aspergillus	Aspergillus acidus	Tea	Mogensen, J.M., Varga J., Thrane, U., Frisvad, J.C., 2009. Aspergillus acidus from Puerh tea and black tea does not produce ochratoxin A and fumonisin B2. Int. J. Food Microbiol. 132, 141-144.			CBS 56465	Kozakiewicz, Z., 1989. Aspergillus species on stored products. Mycological Papers 161, 1–188.
1918	Fungi	Ascomycota	Trichocomaceae	Aspergillus	Aspergillus niger	Beverages	Nout, R., 2000. Useful role of of fungi in food processing. In: Samson, R.A., Hoekstra, E.S., Frisvad, J.C., Filtenborg, O. (Eds.), Introduction to food- and airborne fungi. 6th ed. Centraalbureau voor Schimmelciultures, Utrecht.			CBS 51388	Accensi, F., Cano, J., Figuera, L., Abarca, M.L., Cabañes, F.J., 1999. New PCR method to differentiate species in the Aspergillus niger aggregate. FEMS Microbiol Lett. 180, 191-6.
1884	Fungi	Ascomycota	Trichocomaceae	Aspergillus	Aspergillus oryzae	Soy, Beverages	Bhumiratana, A., Flegel, T.W., Glinsukon, T., Somporan, W., 1980. Isolation and analysis of molds from soy sauce koji in Thailand. Appl Environ Microbiol. 39, 430-5. Miyake, Y., Ito, C., Itoigawa, M., Osawa, T., 2007. Isolation of the Antioxidant Pyranonigrin-A from Rice Mold Starters Used in the Manufacturing Process of Fermented Foods. Biosci Biotechnol Biochem. 71, 2515-21. Barbesgaaard, P., Heldt-Hansen, H.P., Diderichsen, B., 1992. On the safety of aspergillus oryzae: a review. Appl Microbiol Biotechnol. 36, 569-572.			CBS 100925	Geiser, D.M, Pitt, J.I., Taylor, J.W., 1998. Cryptic speciation and recombination in the aflatoxin-producing fungus Aspergillus flavus. Proc Natl Acad Sci U S A. 95, 388-393.
1971	Fungi	Ascomycota	Trichocomaceae	Aspergillus	Aspergillus sojae	Soy	Miyake, Y., Ito, C., Itoigawa, M., Osawa, T., 2007. Isolation of the Antioxidant Pyranonigrin-A from Rice Mold Starters Used in the Manufacturing Process of Fermented Foods. Biosci Biotechnol Biochem. 71, 2515-21.			CBS 100928	Godet, M., Munaut, F., 2010. Molecular strategy for identification in Aspergillus section Flavi. FEMS Microbiol Lett. 304, 157-68.
1960	Fungi	Ascomycota	Trichocomaceae	Penicillium	Penicillium camemberti	Dairy	Moreau, C., 1979. Nomenclature des *Penicillium* utiles à la préparation du Camembert. Le Lait 59, 219-233.			CBS 299,48	Thom, C., 1906. Fungi in cheese ripening; Camembert and Roquefort. Bull. Bur. Anim. Ind. US Dep. Agric. 82, 33.
1998	Fungi	Ascomycota	Trichocomaceae	Penicillium	Penicillium caseifulvum	Dairy	Lund, F., Filtenborg, O., Frisvad, J.C., 1998. Penicillium caseifulvum, a new species found on fermented blue cheese. J. Food Mycol. 2, 95–100.			CBS 101134	Lund, F., Filtenborg, O., Frisvad, J.C., 1998. Penicillium caseifulvum, a new species found on fermented blue cheese. J. Food Mycol. 2, 95-100.
1980	Fungi	Ascomycota	Trichocomaceae	Penicillium	Penicillium chrysogenum	Dairy	Lund, F., Filtenborg, O., Frisvad, J.C., 1995. Associated mycoflora of cheese. Food Microbiol.12, 173-180.			CBS 306,48	Thom, C., 1910. U.S.D.A. Bureau of Animal Industry Bulletin 118, 1-107.
1910	Fungi	Ascomycota	Trichocomaceae	Penicillium	Penicillium commune	Dairy	Lund, F., Filtenborg, O., Frisvad, J.C., 1995. Associated mycoflora of cheese. Food Microbiol.12, 173-180.			CBS 216,30	Thom, C., 1910. U.S.D.A. Bureau of Animal Industry Bulletin 118, 1-107.
1980	Fungi	Ascomycota	Trichocomaceae	Penicillium	Penicillium nalgiovense	Dairy, Meat	Farber, P., Geisen, R., 1994. Antagonistic Activity of the Food-Related Filamentous Fungus Penicillium nalgiovense by the Production of Penicillin. Appl Environ Mmicrobiol. 60, 3401-3404.			CBS 352,48	Laxa, O., 1932. Über die Reifung des Ellischauer Käses Zentralblatt für Bakteriologie und Parasitenkunde, Abteilung 2, 86, 160-165.
1950	Fungi	Ascomycota	Trichocomaceae	Penicillium	Penicillium roqueforti	Dairy	Moreau, C., 1980. Le *Penicillium roqueforti,* morphologie, physiologie, intérêt en industrie fromagère, mycotoxines. (Révision bibliographique). Lait 60, 254-271.			CBS 221,30	Thom 1906. Bull. Bur. Anim. Ind. US Dep. Agric. 82: 35

Documented	Kingdom	Phylum	Family	Genus	Taxonomy	Food Usage	Reference Food Usage	QPS	Danish List	Type Strain	Reference Taxonomy
1911	Fungi	Ascomycota	Trichocomaceae	Penicillium	Penicillium solitum	Meat	Frisvad, J.C., Smedsgaard, J., Larsen, T.O., Samson, R.A., 2004. Mycotoxins, drugs and other extrolites produced by species in Penicillium subgenus Penicillium. Stud. Mycol., 49, 201-241.			CBS 288.36	Westling, R., 1911. Über die grünen Spezies der Gattung Penicillium Journal: Arkiv før Botanik 11, 1-156.
1827	Fungi	Ascomycota	Wallemiaceae	Sporendonema	Sporendonema casei	Dairy	Ratomahenina, R., Chabalier, C., Galzy, P., 1994. Concerning Sporendonema casei Desmazieres [France, moulds in cheeses] Latte 19(6) 616-617			CBS 355.29	Desmazières, J.B.H.J., 1827. Annales des Sciences Naturelles, Botanique 11: 246-249.
1970	Fungi	Basidiomycota	Cystofilobasidiaceae	Cystofilobasidium	Cystofilobasidium infirmominiatum	Dairy	Early, R., 1998. The technology of dairy products. Springer.			CBS 323	Hamamoto, M., Sugiyama, J.,Komagata, K., 1988. Transfer of Rhodosporidium infirmominiatum to the genus Cystofilobasidium as Cystofilobasidium infirmominiatum comb. nov. J Gen Appl Microbiol 34, 271–278.
1942	Fungi	Basidiomycota	Cystofilobasidiaceae	Guehomyces	Guehomyces pullulans	Vegetables	Batra, L. R. and Millner, P. D., 1974. Some Asian fermented foods and beverages and associated fungi. Mycologia, 66, 942-950.			CBS 2532	Fell, J.W., Scorzetti, G., 2004. Reassignment of the basidiomycetous yeasts Trichosporon pullulans to Guehomyces pullulans gen. nov., comb. nov. and Hyalodendron lignicola to Trichosporon lignicola comb. nov. Int J Syst Evol Microbiol 54(3) 995-998
1903	Fungi	Zygomycota	Mucoraceae	Mucor	Mucor hiemalis	Soy	Han, B.Z., Kuijpers, A.F.A., Thanh, N.V., Nout., R.M.J., 2004. Mucoraceous moulds involved in the commercial fermentation of Sufu Pehtze. Antonie van Leeuwenhoek Volume 85, Number 3, 253-257.			CBS 201.65	Wehmer, C., 1903. Der Mucor der Hanfrötte, M. hiemalis nov. spec. Annales Mycologici 1, 37-41.
1753	Fungi	Zygomycota	Mucoraceae	Mucor	Mucor mucedo	Dairy	Oterholm, A., 2003. [Norwegian cheeses from a historical perspective — Gamelost]. Meieriposten, 9, 200–211. Oterholm, A., 2003. [Norwegian cheeses from a historical perspective — Pultost]. Meieriposten, 9, 264–274.			CBS 640.67	Persoon, C.H., 1801.Synopsis methodica fungorum 1-706
1864	Fungi	Zygomycota	Mucoraceae	Mucor	Mucor plumbeus	Dairy	Han, B.Z., Rombouts, F.M., Nout, M.J., 2001. A Chinese fermented soybean food. Int J Food Microbiol. 65, 1-10. Hayaloglu, A.A., Kirbag, S., 2007. Microbial quality and presence of moulds in Kuflu cheese. Int J Food Microbiol. 115, 376-80.			CBS 129.41	Bonorden, H.F., 1864. Abhandlungen der Naturforschenden Gesellschaft zu Halle 8, 109.
1850	Fungi	Zygomycota	Mucoraceae	Mucor	Mucor racemosus	Dairy	Han, B.Z., Rombouts, F.M., Nout, M.J., 2001. A Chinese fermented soybean food. Int J Food Microbiol. 65, 1-10. Hayaloglu, A.A., Kirbag, S., 2007. Microbial quality and presence of moulds in Kuflu cheese. Int J Food Microbiol. 115, 376-80.			CBS 260.68	Fresenius, G., 1850. Beiträge zur Mykologie 1, 12.
1904	Fungi	Zygomycota	Mucoraceae	Rhizopus	Rhizopus microsporus	Vegetables	Shrestha, H., Rati, E.R., 2003. Defined microbial starter for the production of Poko - a traditional fermented food product of Nepal. Food Biotechnol 17(1) 15-25			CBS 631.82	Schipper, M.A.A, Stalpers, J.A., 1984. A revision of the genus Rhizopus. II. The Rhizopus microsporus-group. Studies in Mycology 25 20-34
<1920	Fungi	Zygomycota	Mucoraceae	Rhizopus	Rhizopus oligosporus	Soy	Rusmin, S., Ko, S.D., 1974. Rice-Grown Rhizopus oligosporus Inoculum for Tempeh Fermentation. Appl Microbiol. 28, 347-50.			CBS 377.62	Abe, A., Oda, Y., Asano, K , Sone, T., 2006. The molecular phylogeny of the genus Rhizopus based on rDNA sequences. Biosci Biotechnol Biochem. 70, 2387-93.
1895	Fungi	Zygomycota	Mucoraceae	Rhizopus	Rhizopus oryzae	Soy	Rehms H, Barz W., 1995. Degradation of stachyose, raffinose, melibiose and sucrose by different tempe-producing Rhizopus fungi. Appl Microbiol Biotechnol. 44(1-2):47-52. Essers AJ, Jurgens CM, Nout MJ., 1995. Contribution of selected fungi to the reduction of cyanogen levels during solid substrate fermentation of cassava. Int J Food Microbiol. 26(2):251-7.			CBS 111233	Went, F.A.F.C., Prinsen Geerligs, H.C., 1895. [Observation of Yeast and Moulds for Arack fermentation]. Verhandelingen, Koninklijke Nederlandse Akademie van Wetenschappen, Afdeling Natuurkunde 4 3-31
1818	Fungi	Zygomycota	Mucoraceae	Rhizopus	Rhizopus stolonifer	Soy	Rehms H, Barz W., 1995. Degradation of stachyose, raffinose, melibiose and sucrose by different tempe-producing Rhizopus fungi. Appl Microbiol Biotechnol. 44(1-2):47-52. Essers AJ, Jurgens CM, Nout MJ., 1995. Contribution of selected fungi to the reduction of cyanogen levels during solid substrate fermentation of cassava. Int J Food Microbiol. 26(2):251-7.			CBS 403.51	Liou, G.Y., Chen, S.R., Wei, Y.H., Lee, F.L., Fu, H.M., Yuan, G.F., Stalpers, J.A., 2007. Polyphasic approach to the taxonomy of the Rhizopus stolonifer group. Myc Res III 196-203