A Compilation of Histamine-Forming Bacteria Associated with Foods

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SUMMARY

The objective of this article is to document the names of histamine-forming bacteria (HFB) found in foods and available from the scientific literature. This extensive compilation found 148 unique species of HFB identified, representing 57 genera, 25 families, 13 orders, 6 classes, and 3 phyla. A synonymous species name was recorded in many cases, so both species names have been recorded in this article. Based on the findings, there were 78 species of Gram-negative and 70 species of Gram-positive HFB, with 18 spore-forming species. The food matrix, or type of food from which the bacteria were identified, also is provided, and the most common food matrix identified in this listing was fish based. The genera with the most HFB species were *Bacillus (14), Lactobacillus (11)*, and *Staphylococcus (8)*. The families with the most genera were *Lactobacillaceae (31)*, *Enterobacteriaceae (29)*, and *Vibrionaceae (17)*. A list of published HFB, publication authors, and corresponding document DOI numbers is included. This compilation with DOI numbers should be useful to other researchers searching for HFB with certain characteristics.

INTRODUCTION

The objective of this article is to document histamine-forming bacteria (HFB) that have been cited in published literature and are present in human foods. The effort and study objectives resulted from various investigations over the years that the authors have been involved in, looking for HFB with particular characteristics. This initial effort found no single database of HFB and characteristics in human food, so a comprehensive list of HFB was compiled.

Histamine can be formed in certain bacteria by the enzyme histidine decarboxylase (HDC) if free molecules of the amino acid L-histidine are present. HDC is uniquely able to remove a carbon dioxide molecule from the L-histidine molecule to form histamine *(51)*, and either of two pathways are used, depending on whether the bacteria are Gram-positive or Gram-negative. The Gram-positive bacteria use a pyruvoyl residue that is covalently bound at the active site, whereas pyridoxal phosphate-dependent enzymes are used in Gram-negative bacteria *(25)*. The bacteria gain a proton of energy and pH control from this decarboxylase reaction *(34, 35)*. Previous authors provide a clear explanation and schematic of the cellular process to produce histamine in the bacteria *(17, 30, 35)*. This process includes the proton motive force generated by the decarboxylation and electrogenic antiporter mechanism of transporting the L-histidine molecule into the bacterial cell, the ensuing decarboxylation reaction, and the histamine molecule that is produced and then transported or exported out of the cell. A generalized scheme is presented by Molenaar et al. *(34)*.

The histidine → histamine reaction requires free L-histidine molecules to be available in the food matrix for the HFB to process. This histidine molecule is provided by either the naturally occurring free L-histidine in muscle tissues or the food matrix. The free L-histidine also is available during fermentation when proteins are broken down (proteolysis) into their free amino acids *(41)*. For example, free L-histidine is naturally available in the muscle tissue of scombroid and other fast-moving fish. Large amounts of free L-histidine in these fish act as a buffer during fight-or-flight muscle movement *(9)*. However, other sources of free amino acids, such as histidine, are generated during the fermentation of foods such as kimchi, miso, cheese, sausage, wine, beer, and fermented fishery products. In virtually all foods containing proteins and experiencing the conditions that enable microbial fermentation activity, histamine formation can be expected if HFB are present. The total amount of the histamine formed strongly depends on the nature of the food, types of bacteria present, and incubation temperature *(30)*.

Histamine is the only biogenic amine that is regulated for food safety *(60)*, and it is only regulated for fish, primarily scombroid fish *(19)*. The allowable sets of limits for histamine content in fish varies in different countries. For example, the levels of histamine allowed in fish in the United States differ from those in the European Union *(12)*.

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TABLE 1. Species or genera (unique) that are Gram-positive or Gram-negative, their oxygen requirements, and their spore-forming ability

Gram-positive or Gram-negative	Spores	Environment	Count	Subtotal	Total
Positive	Endospore	Aerobic	2		
		Anaerobic	2		
		Facultative anaerobic	14	18	
	No	Aerobic	2		
		Aerotolerant	11		
		Anaerobic	3		
		Facultative anaerobic	32		
		Microaerophile	2		
		Unknown	2	52	70
Negative	No	Aerobic	15		
		Facultative aerobic	3		
		Facultative anaerobic	60	78	78
Total unique bacterial names				**148**	

A list of histamine-secreting bacteria in the human gut microbiome has been developed based on genomic analyses *(35)*. Although the lists may overlap, this article focuses on HFB in human foods.

METHODS

An extensive literature search of the electronic media using Google Scholar and other search engines was conducted using terms such as HFB, tuna, scombroid fish poisoning, cheese, sausage, fermented foods, sauerkraut, spinach, fermented fish, and wine. The HFB species were recorded and then identified as to genus, family, order, class, and phylum. Characteristics such as whether the species is Gram-positive or Gram-negative, whether it is a spore former, and its preferred level of oxygen in the environment also were noted. The data were recorded in Microsoft Excel tables and summarized using pivot tables. The species, genera, and some characteristics were verified with the website BacDive *(2)*.

Not every published paper that mentions HFB can be cited or mentioned here; however, when a species new to the list being developed was found, the entire list of HFB from that paper was included in the dataset, along with all characteristics of that species or group. Some HFB activity in foods was only identified to the genus or family level, and genera or families were included in the master list as well. Several HFB species were listed in only one source and were not identified in BacDive *(2)*, so some characteristics were labeled as unknown.

RESULTS

In total, 182 species of bacteria, genus, or family names were identified as HFB present in human foods and are listed in *Appendix A*. Bacterial names are updated periodically, and current correct names and synonyms have been previously documented and collated in BacDive *(2)*. There are four types of listing for the HFB in this article: the correct species names and synonyms; synonyms only; one unique genus; and one unique family. The unique species, genera, and families are identified in *Appendix A*, as well as characteristics such as Gram-positive or Gram-negative, oxygen requirements, and the ability to form spores. Of the 148 unique names of species and/or genera, there were 70 Gram-positive and 78 Gram-negative species *(Table 1)*. The Gram-positive group contained 18 species that can form spores under certain conditions. The 148 HFB species were part of 57 genera, 25 families, 13 orders, 6 classes, and just 3 phyla *(Table 2)*. For comparison it is estimated that there are at least 65 known bacterial phyla *(47)*.

It's important to understand the environment (oxygen requirements) for these HFB. For example, *Tetragenococcus* spp. are capable of growing in anaerobic environments, like unretorted canned anchovies *(4)* (DeBeer, J., personal communication). Many *Bacillus* spp. can form spores that withstand harsh dry environments, like dried fishmeal *(23)*. This is not a complete list, but the compilation hopefully can help future researchers understand why they suddenly find an unfamiliar species in food *(46)*.

TABLE 2. Taxonomic groupings of histamine-forming bacteria

Taxonomic grouping	Count
Species	148
Genera	57
Families	25
Orders	13
Classes	6
Phyla	3

TABLE 3. Environment, food types, and food matrices for histamine-forming bacteria activity

Environment	Food type	Food matrix	Count	Subtotal	Total
Land based	Fermented food	Fermented food (cheese, meat, & wine)	20		
		Fermented foods	15	35	
	Fermented food, dairy	Cheese	18		
		Cheese, goat	2		
		Fermented food, cheese	8		
		Fermented food, cheese & other foods	1		
		Fermented food, cheese biofilms	1		
		Fermented food, Italian cheese	1		
		Fermented food, semihard Tilsit (Swiss) cheese	2		
		Fermented food, dairy	1	34	
	Fermented food, vegetable	Vegetable, kimchi	1		
		Vegetable, miso	5		
		Vegetable, mustard pickle	3		
		Vegetable, soy sauce	1		
		Vegetable, spinach	5		
		Vegetable, sugar beets	2	17	86
Marine	Seafood	Fermented fish products	2		
		Fermented Malaysian fish sausage	3		
		Fermented seafood & vegetable, salted	2		
		Fermented seafood, salted canned anchovies	5		
		Seafood	4		
		Seafood, *Auxis thazard*	4		
		Seafood, cod	2		
		Seafood, dried flying fish	1		
		Seafood, fish	18		
		Seafood, fish paste	22		

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TABLE 3. Environment, food types, and food matrices for histamine-forming bacteria activity (cont.)

Environment	Food type	Food matrix	Count	Subtotal	Total
Marine	Seafood	Seafood, Indian mackerel	21		
		Seafood, longtail & eastern little tuna	14		
		Seafood, multiple fish species	67		
		Seafood, Pacific mackerel	11		
		Seafood, sailfish	14		
		Seafood, sailfish & milkfish	1		
		Seafood, salted dried fish	7		
		Seafood, sardines	6		
		Seafood, scombroid	10		
		Seafood, shrimp, marine, brackish	25		
		Seafood, swordfish	2		
		Seafood, tuna sausage	8		
		Seafood, tuna waste	7		
		Seafood, various sources	25		
		Seafood, yellowfin tuna	10	291	
	Ocean water	Water samples, Gulf of Mexico	16	16	307
Overall total				393	

This article does not list, quantify, or compare the histamine formation of the HFB, because this ability is not often detailed in the published literature. In addition, individual species are not identified as psychrophilic, mesophilic, or thermophilic, because bacterial serovars of some species can assume more than one of these three conditions. For example, *Weissella paramesenteroides*, a known HFB, is identified as being psychrophilic, mesophilic, or thermophilic, depending on the strain involved *(2)*.

All of these HFB include a notation that the species name was correct for mid-2024 or identified in the literature as a synonym name *(Appendix A)*. Multiple species were found that were identified with different names (synonyms) by different authors at different periods. These HFB are listed as synonyms in *Appendix A*. The number of species with synonyms identified in a search of the available literature was 35. *Appendix B* lists the HFB with the authors and DOI numbers of the source documentation.

HFB were identified in a multitude of food matrices. *Table 3* is divided into 3 sections: environment, food types, and food matrices. The food matrices within the seafood type had by far the most citations of HFB, with 291 mentions by all bacterial species or genera recorded. Fermented foods, including fermented seafood, were cited in association with 98 bacterial species or genera. Many citations are expected to be duplicates, but an order of magnitude is provided for the sources of HFB within food matrices and/or types. The phyla, classes, orders, families, and genera of the unique HFB are listed in *Table 4*.

DISCUSSION

About 30,000 formally named bacterial species have been cultured, but there are likely a million to a billion unnamed species *(15)*. Curtis et al. *(11)* estimate that there are 2 million bacterial taxa in the sea. As can be readily seen by what has been provided in this compilation, the number of HFB, with fewer than 150 named species, is a tiny percentage of the total number of bacterial species.

In this compilation of HFB, the genera with the highest numbers of unique species were *Bacillus* (14), *Lactobacillus* (11), and *Staphylococcus* (8). The families with the highest numbers of genera were *Lactobacillaceae* (31), *Enterobacteriaceae* (29), and *Vibrionaceae* (17). The orders with the most reported HFB species were Enterobacterales (44), Lactobacillales (39), Bacillales (27) and Vibrionales (17).

In conclusion, the authors hope this compilation of HFB is useful to future researchers when they are studying an unknown source of histamine. Both authors have had occasions in the past in which they could have used this list.

TABLE 4. Phylum, class, order, family, and genus of all unique histamine-forming bacteria

Phylum	Class	Order	Family	Genus	Total
Actinomycetota	Actinomycetia	Micrococcales	*Brevibacteriaceae*	*Brevibacterium*	1
			Micrococcaceae	*Micrococcus*	1
Bacillota	Bacilli	Bacillales	*Bacillaceae*	*Bacillus*	14
				Lysinibacillus	1
			Listeriaceae	*Listeria*	1
			Paenibacillaceae	*Brevibacillus*	1
			Staphylococcaceae	*Staphylococcus*	10
		Lactobacillales	*Enterococcaceae*	*Enterococcus*	2
				Tetragenococcus	2
			Lactobacillaceae	*Lacticaseibacillus*	2
				Lactiplantibacillus	1
				Lactobacillus	11
				Latilactobacillus	2
				Lenticolactobacillus	2
				Lentilactobacillus	2
				Leuconostoc	1
				Levilactobacillus	1
				Limosilactobacillus	2
				Oenococcus	1
				Pediococcus	3
				Weissella	3
			Streptococcaceae	*Lactococcus*	2
				Streptococcus	2
	Clostridia	Eubacteriales	*Lachnospiraceae*	*Clostridium*	2
Pseudomonadota	Alphaproteobacteria	Sphingomonadales	*Sphingomonadaceae*	*Sphingomonas*	1
	Betaproteobacteria	Burkholderiales	*Alcaligenaceae*	*Alcaligenes*	1
		Neisseriales	*Neisseriaceae*	*Neisseria*	1
	Gammaproteobacteria	Aeromonadales	*Aeromonadaceae*	*Aeromonas*	3
		Alteromonadales	*Shewanellaceae*	*Shewanella*	3
		Enterobacterales	*Enterobacteriaceae*	*Citrobacter*	5
				Cronobacter	1
				Enterobacter	6
				Escherichia	2
				Klebsiella	4
				Plesiomonas	1
				Pluralibacter	1
				Proteus	5
				Raoultella	2
				Salmonella	1
				Shigella	1

Table continued on the next page.

TABLE 4. Phylum, class, order, family, and genus of all unique histamine-forming bacteria (cont.)

Phylum	Class	Order	Family	Genus	Total
Pseudomonadota	Gammaproteobacteria	Enterobacterales	*Erwiniaceae*	*Erwinia*	1
				Pantoea	2
			Hafniaceae	*Edwardsiella*	1
				Hafnia	2
			Morganellaceae	*Morganella*	2
				Providencia	3
			Yersiniaceae	*Rahnella*	1
				Serratia	3
		Pasteurellales	*Pasteurellaceae*	*Actinobacillus*	1
		Pseudomonadales	*Moraxellaceae*	*Acinetobacter*	2
				Psychrobacter	1
			Pseudomonadaceae	*Pseudomonas*	4
		Vibrionales	*Vibrionaceae*	*Listonella*	1
				Photobacterium	8
				Vibrio	8
Overall total					**148**

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APPENDIX A. Histamine-forming bacteria found in the literature that are Gram-positive or Gram-negative, their oxygen requirements, and their spore-forming ability

Bacterial species named in text	Taxonomic status	Correct or alternate name	Unique	Gram-positive or Gram-negative	Environment	Spores
Acinetobacter baumannii	Correct		Unique	Negative	Aerobic	No
Acinetobacter lwoffii	Correct		Unique	Negative	Aerobic	No
Actinobacillus ureae	Correct		Unique	Negative	Facultative anaerobic	No
Aeromonas hydrophila	Correct		Unique	Negative	Facultative anaerobic	No
Aeromonas salmonicida	Correct		Unique	Negative	Facultative anaerobic	No
Aeromonas sobria	Correct		Unique	Negative	Facultative anaerobic	No
Aeromonas spp.	Genus only			Negative	Facultative anaerobic	No
Alcaligenes faecalis	Correct		Unique	Negative	Aerobic	No
Alteromonas putrefaciens	Synonym	*Shewanella putrefaciens*		Negative	Facultative anaerobic	No
Bacillus amyloliquefaciens	Correct		Unique	Positive	Facultative anaerobic	Endospore
Bacillus cibi	Synonym	*Metabacillus indicus*	Unique	Positive	Facultative anaerobic	Endospore
Bacillus coagulans	Synonym	*Heyndrickxia coagulans*	Unique	Positive	Facultative anaerobic	Endospore
Bacillus firmus	Synonym	*Cytobacillus firmus*	Unique	Positive	Facultative anaerobic	Endospore
Bacillus flexus	Synonym	*Priestia flexa*	Unique	Positive	Facultative anaerobic	Endospore
Bacillus licheniformis	Correct		Unique	Positive	Facultative anaerobic	Endospore
Bacillus macerans	Synonym	*Paenibacillus macerans*	Unique	Positive	Facultative anaerobic	Endospore
Bacillus malacitensis	Synonym	*Bacillus halotolerans*	Unique	Positive	Facultative anaerobic	Endospore
Bacillus massiliensis	Synonym	*Ureibacillus massiliensis*	Unique	Positive	Facultative anaerobic	Endospore
Bacillus megaterium	Synonym	*Priestia megaterium*	Unique	Positive	Facultative anaerobic	Endospore
Bacillus oleronius	Synonym	*Heyndrickxia oleronia*	Unique	Positive	Facultative anaerobic	Endospore
Bacillus polyfermenticus	Preferred name		Unique	Positive	Facultative anaerobic	Endospore
Bacillus spp.	Genus only			Positive	Facultative anaerobic	Endospore
Bacillus subtilis	Correct		Unique	Positive	Facultative anaerobic	Endospore

Table continued on the next page.

APPENDIX A. Histamine-forming bacteria found in the literature that are Gram-positive or Gram-negative, their oxygen requirements, and their spore-forming ability (cont.)

Bacterial species named in text	Taxonomic status	Correct or alternate name	Unique	Gram-positive or Gram-negative	Environment	Spores
Bacillus thuringiensis	Correct		Unique	Positive	Facultative anaerobic	Endospore
Brevibacillus brevis	Correct		Unique	Positive	Aerobic	Endospore
Brevibacterium casei	Correct		Unique	Positive	Aerobic	No
Citrobacter amalonaticus	Correct		Unique	Negative	Aerobic	No
Citrobacter braakii	Correct		Unique	Negative	Aerobic	No
Citrobacter farmeri	Correct		Unique	Negative	Aerobic	No
Citrobacter freundii	Correct		Unique	Negative	Aerobic	No
Citrobacter koseri	Correct		Unique	Negative	Aerobic	No
Citrobacter spp.	Genus only			Negative	Aerobic	No
Clostridium irregular	Synonym	*Asaccharospora irregularis*	Unique	Positive	Anaerobic	Endospore
Clostridium perfringens	Correct		Unique	Positive	Anaerobic	Endospore
Clostridium spp.	Genus only			Positive	Anaerobic	Endospore
Cronobacter sakazakii	Correct		Unique	Negative	Facultative anaerobic	No
Edwardsiella hoshinae	Correct		Unique	Negative	Facultative anaerobic	No
Enterobacter aerogenes	Synonym	*Klebsiella aerogenes*		Negative	Facultative anaerobic	No
Enterobacter amnigenus	Synonym	*Lelliottia amnigena*	Unique	Negative	Facultative anaerobic	No
Enterobacter cloacae	Correct		Unique	Negative	Facultative anaerobic	No
Enterobacter gergovia	Synonym	*Pluralibacter gergoviae*	Unique	Negative	Facultative anaerobic	No
Enterobacter hormaechei	Correct		Unique	Negative	Facultative anaerobic	No
Enterobacter spp.	Genus only			Negative	Facultative anaerobic	No
Enterobacter taylorae	Synonym	*Enterobacter cancerogenus*	Unique	Negative	Facultative anaerobic	No
Enterobacter xianfengensis	No BacDive		Unique	Negative	Facultative anaerobic	No
Enterobacteriaceae	Family			Negative	NA[a]	NA
Enterococcus casseliflavus	Correct		Unique	Positive	Facultative anaerobic	No
Enterococcus faecalis	Correct		Unique	Positive	Facultative anaerobic	No
Erwinia persicina	Correct		Unique	Negative	Facultative anaerobic	No

Table continued on the next page.

APPENDIX A. Histamine-forming bacteria found in the literature that are Gram-positive or Gram-negative, their oxygen requirements, and their spore-forming ability (cont.)

Bacterial species named in text	Taxonomic status	Correct or alternate name	Unique	Gram-positive or Gram-negative	Environment	Spores
Escherichia coli	Correct		Unique	Negative	Facultative anaerobic	No
Escherichia hermannii	Correct		Unique	Negative	Facultative anaerobic	No
Hafnia alvei	Correct		Unique	Negative	Facultative anaerobic	No
Hafnia paralvei	Correct		Unique	Negative	Facultative anaerobic	No
Klebsiella aerogenes	Correct		Unique	Negative	Facultative anaerobic	No
Klebsiella oxytoca	Correct		Unique	Negative	Facultative anaerobic	No
Klebsiella pneumoniae	Correct		Unique	Negative	Facultative anaerobic	No
Klebsiella pneumoniae subsp. *pneumoniae*	Subsp.			Negative	Facultative anaerobic	No
Klebsiella spp.	Genus only			Negative	Facultative anaerobic	No
Klebsiella variicola	Correct		Unique	Negative	Facultative anaerobic	No
Lacticaseibacillus casei	Correct		Unique	Positive	Anaerobic	No
Lacticaseibacillus paracasei	Correct		Unique	Positive	Anaerobic	No
Lactiplantibacillus plantarum	Correct		Unique	Positive	Facultative anaerobic	No
Lactobacillus bavaricus	Synonym	*Latilactobacillus sakei*		Positive	Aerotolerant	No
Lactobacillus brevis	Synonym	*Levilactobacillus brevis*		Positive	Aerotolerant	No
Lactobacillus buchneri	Synonym	*Lenticolactobacillus buchneri*	Unique	Positive	Aerotolerant	No
Lactobacillus curvatus	Synonym	*Latilactobacillus curvatus*		Positive	Aerotolerant	No
Lactobacillus delbrueckii	Correct	*Lentilactobacillus hilgardii*	Unique	Positive	Aerotolerant	No
Lactobacillus delbrueckii subsp. *lactis*	Subsp.			Positive	Aerotolerant	No
Lactobacillus helveticus	Correct		Unique	Positive	Aerotolerant	No
Lactobacillus hilgardii	Synonym	*Lentilactobacillus hilgardii*	Unique	Positive	Aerotolerant	No
Lactobacillus mali	Synonym	*Liquorilactobacillus mali*	Unique	Positive	Aerotolerant	No
Lactobacillus para. paracasei	Subsp.			Positive	Aerotolerant	No

Table continued on the next page.

APPENDIX A. Histamine-forming bacteria found in the literature that are Gram-positive or Gram-negative, their oxygen requirements, and their spore-forming ability (cont.)

Bacterial species named in text	Taxonomic status	Correct or alternate name	Unique	Gram-positive or Gram-negative	Environment	Spores
Lactobacillus parabuchneri	Synonym	*Lentilactobacillus parabuchneri*	Positive	Aerotolerant	No	
Lactobacillus paracasei	Synonym	*Lacticaseibacillus paracasei*		Positive	Aerotolerant	No
Lactobacillus paracollinoides	Synonym	*Secundilactobacillus paracollinoides*	Unique	Positive	Aerotolerant	No
Lactobacillus pentosus	Synonym	*Lactiplantibacillus pentosus*	Unique	Positive	Aerotolerant	No
Lactobacillus plantarum	Synonym	*Lactiplantibacillus plantarum*	Unique	Positive	Aerotolerant	No
Lactobacillus rhamnosus	Synonym	*Lacticaseibacillus rhamnosus*	Unique	Positive	Aerotolerant	No
Lactobacillus rossiae	Synonym	*Furfurilactobacillus rossiae*	Unique	Positive	Aerotolerant	No
Lactobacillus saerimneri 30a	Synonym	*Ligilactobacillus saerimneri*	Unique	Positive	Aerotolerant	No
Lactobacillus spp.	Genus only			Positive	Aerotolerant	No
Lactococcus garvieae	Correct		Unique	Positive	Facultative anaerobic	No
Lactococcus lactis	Correct		Unique	Positive	Facultative anaerobic	No
Lactococcus lactis subsp. *lactis*	Subsp.			Positive	Facultative anaerobic	No
Latilactobacillus curvatus	Correct		Unique	Positive	Microaerophile	No
Latilactobacillus sakei	Correct		Unique	Positive	Microaerophile	No
Lenticolactobacillus buchneri	No BacDive		Unique	Positive	Unknown	No
Lenticolactobacillus parabuchneri	No BacDive		Unique	Positive	Unknown	No
Lentilactobacillus hilgardii	Correct		Unique	Positive	Facultative anaerobic	No
Lentilactobacillus parabuchneri	Correct		Unique	Positive	Facultative anaerobic	No
Leuconostoc mesenteroides	Correct		Unique	Positive	Facultative anaerobic	No
Leuconostoc spp.	Genus only			Positive	Facultative anaerobic	No
Levilactobacillus brevis	Correct		Unique	Positive	Anaerobic	No
Limosilactobacillus reuteri	Correct		Unique	Positive	Facultative anaerobic	No
Limosilactobacillus vaginalis	Correct		Unique	Positive	Facultative anaerobic	No

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APPENDIX A. Histamine-forming bacteria found in the literature that are Gram-positive or Gram-negative, their oxygen requirements, and their spore-forming ability (cont.)

Bacterial species named in text	Taxonomic status	Correct or alternate name	Unique	Gram-positive or Gram-negative	Environment	Spores
Listeria innocua	Correct		Unique	Positive	Facultative anaerobic	No
Listonella anguillarum	Correct		Unique	Negative	Aerobic	No
Lysinibacillus boronitolerans	Correct		Unique	Positive	Aerobic	Endospore
Micrococcus spp.	Genus only		Unique	Positive	Aerobic	No
Morganella morganii	Correct		Unique	Negative	Facultative anaerobic	No
Morganella psychrotolerans	Correct		Unique	Negative	Facultative anaerobic	No
Morganella spp.	Genus only			Negative	Facultative anaerobic	No
Neisseria zoodegmatis	Correct		Unique	Negative	Aerobic	No
Oenococcus oeni	Correct		Unique	Positive	Facultative anaerobic	No
Pantoea agglomerans	Correct		Unique	Negative	Aerobic	No
Pantoea dispersa	Correct		Unique	Negative	Aerobic	No
Pantoea spp.	Genus only			Negative	Aerobic	No
Pediococcus damnosus	Correct		Unique	Positive	Facultative anaerobic	No
Pediococcus parvulus	Correct		Unique	Positive	Facultative anaerobic	No
Pediococcus pentosaceus	Correct		Unique	Positive	Facultative anaerobic	No
Photobacterium angustum	Correct		Unique	Negative	Facultative anaerobic	No
Photobacterium aquimaris	Correct		Unique	Negative	Facultative anaerobic	No
Photobacterium damselae	Correct		Unique	Negative	Facultative anaerobic	No
Photobacterium damselae subsp. *damselae*	Subsp.			Negative	Facultative anaerobic	No
Photobacterium iliopiscarium	Correct		Unique	Negative	Facultative anaerobic	No
Photobacterium kishitanii	Correct		Unique	Negative	Facultative anaerobic	No
Photobacterium leiognathi	Correct		Unique	Negative	Facultative anaerobic	No
Photobacterium phosphoreum	Correct		Unique	Negative	Facultative anaerobic	No
Photobacterium psychrotolerans	Correct		Unique	Negative	Facultative anaerobic	No
Plesiomonas shigelloides	Correct		Unique	Negative	Facultative anaerobic	No

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APPENDIX A. Histamine-forming bacteria found in the literature that are Gram-positive or Gram-negative, their oxygen requirements, and their spore-forming ability (cont.)

Bacterial species named in text	Taxonomic status	Correct or alternate name	Unique	Gram-positive or Gram-negative	Environment	Spores
Pluralibacter pyrinus	Correct		Unique	Negative	Aerobic	No
Proteus columbae	Correct		Unique	Negative	Facultative anaerobic	No
Proteus marina	No BacDive		Unique	Negative	Facultative anaerobic	No
Proteus mirabilis	Correct		Unique	Negative	Facultative anaerobic	No
Proteus penneri	Correct		Unique	Negative	Facultative anaerobic	No
Proteus spp.	Genus only			Negative	Facultative anaerobic	No
Proteus vulgaris	Correct		Unique	Negative	Facultative anaerobic	No
Providencia rettgeri	Correct		Unique	Negative	Facultative aerobic	No
Providencia rustigianii	Correct		Unique	Negative	Facultative aerobic	No
Providencia stuartii	Correct		Unique	Negative	Facultative aerobic	No
Pseudomonas aeruginosa	Correct		Unique	Negative	Facultative anaerobic	No
Pseudomonas fluorescens	Correct		Unique	Negative	Facultative anaerobic	No
Pseudomonas putida	Correct		Unique	Negative	Facultative anaerobic	No
Pseudomonas spp.	Genus only			Negative	Facultative anaerobic	No
Pseudomonas syringae	Correct		Unique	Negative	Facultative anaerobic	No
Psychrobacter pulmonis	Correct		Unique	Negative	Aerobic	No
Rahnella agnatilis	No BacDive	*Rahnella aquatilis*				
Unique	Negative	*Facultative anaerobic*	No			
Rahnella spp.	Genus only			Negative	Facultative anaerobic	No
Raoultella ornithinolytica	Synonym	*Klebsiella ornithinolytica*	Unique	Negative	Facultative anaerobic	No
Raoultella planticola	Synonym	*Klebsiella planticola*	Unique	Negative	Facultative anaerobic	No
Raoultella spp.	Genus only			Negative	Facultative anaerobic	No
Salmonella enterica	Correct		Unique	Negative	Facultative anaerobic	No
Serratia fonticola	Correct		Unique	Negative	Facultative anaerobic	No

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APPENDIX A. Histamine-forming bacteria found in the literature that are Gram-positive or Gram-negative, their oxygen requirements, and their spore-forming ability (cont.)

Bacterial species named in text	Taxonomic status	Correct or alternate name	Unique	Gram-positive or Gram-negative	Environment	Spores
Serratia liquefaciens	Correct		Unique	Negative	Facultative anaerobic	No
Serratia marcescens	Correct		Unique	Negative	Facultative anaerobic	No
Serratia spp.	Genus only			Negative	Facultative anaerobic	No
Shewanella baltica	Correct		Unique	Negative	Facultative anaerobic	No
Shewanella haliotis	Synonym	*Shewanella algae*	Unique	Negative	Facultative anaerobic	No
Shewanella putrefaciens	Correct		Unique	Negative	Facultative anaerobic	No
Shewanella spp.	Genus only			Negative	Facultative anaerobic	No
Shigella flexneri	Correct		Unique	Negative	Facultative anaerobic	No
Sphingomonas paucimobilis	Correct		Unique	Negative	Aerobic	No
Staphylococcus aureus	Correct		Unique	Positive	Facultative anaerobic	No
Staphylococcus capitis	Correct		Unique	Positive	Facultative anaerobic	No
Staphylococcus epidermidis	Correct		Unique	Positive	Facultative anaerobic	No
Staphylococcus hominis	Correct		Unique	Positive	Facultative anaerobic	No
Staphylococcus intermedius	Correct		Unique	Positive	Facultative anaerobic	No
Staphylococcus kloosii	Correct		Unique	Positive	Facultative anaerobic	No
Staphylococcus pasteuri	Correct		Unique	Positive	Facultative anaerobic	No
Staphylococcus saprophyticus	Correct		Unique	Positive	Facultative anaerobic	No
Staphylococcus sciuri	Correct		Unique	Positive	Facultative anaerobic	No
Staphylococcus spp.	Genus only			Positive	Facultative anaerobic	No
Staphylococcus xylosus	Correct		Unique	Positive	Facultative anaerobic	No
Streptococcus faecalis	Synonym	*Enterococcus faecalis*		Positive	Facultative anaerobic	No
Streptococcus faecium	Synonym	*Enterococcus faecium*	Unique	Positive	Facultative anaerobic	No

Table continued on the next page.

APPENDIX A. Histamine-forming bacteria found in the literature that are Gram-positive or Gram-negative, their oxygen requirements, and their spore-forming ability (cont.)

Bacterial species named in text	Taxonomic status	Correct or alternate name	Unique	Gram-positive or Gram-negative	Environment	Spores
Streptococcus thermophilus	Correct		Unique	Positive	Facultative anaerobic	No
Tetragenococcus halophilus	Correct		Unique	Positive	Facultative anaerobic	No
Tetragenococcus muriaticus	Correct		Unique	Positive	Facultative anaerobic	No
Tetragenococcus spp.	Genus only			Positive	Facultative anaerobic	No
Vibrio alginolyticus	Correct		Unique	Negative	Facultative anaerobic	No
Vibrio anguillarum	Synonym	*Listonella anguillarum*		Negative	Facultative anaerobic	No
Vibrio fluvialis	Correct		Unique	Negative	Facultative anaerobic	No
Vibrio halodenitrificans	No BacDive		Unique	Negative	Facultative anaerobic	No
Vibrio harveyi	Correct		Unique	Negative	Facultative anaerobic	No
Vibrio mimicus	Correct		Unique	Negative	Facultative anaerobic	No
Vibrio olivaceus	No BacDive		Unique	Negative	Facultative anaerobic	No
Vibrio parahaemolyticus	Correct		Unique	Negative	Facultative anaerobic	No
Vibrio spp.	Genus only			Negative	Facultative anaerobic	No
Vibrio vulnificus	Correct		Unique	Negative	Facultative anaerobic	No
Weissella cibaria	Correct		Unique	Positive	Facultative anaerobic	No
Weissella confusa	Correct		Unique	Positive	Facultative anaerobic	No
Weissella paramesenteroides	Correct		Unique	Positive	Facultative anaerobic	No

[a]NA, not applicable.

APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number

Bacterial species	Author, y	Ref no.	DOI no.
Acinetobacter baumannii	Tsai et al., 2004	*(56)*	https://doi.org/10.4315/0362-028X-67.2.407
Acinetobacter lwoffii	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Actinobacillus ureae	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
Aeromonas hydrophila	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
	Lim, 2016	*(32)*	https://doi.org/10.1186/s41240-016-0040-x
Aeromonas salmonicida	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
Aeromonas sobria	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Aeromonas spp.	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Alcaligenes faecalis	Devivilla et al., 2019	*(14)*	https://doi.org/10.4315/0362-028X.JFP-19-101
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
Alteromonas putrefaciens	DeBeer et al., 2021	*(13)*	https://doi.org/10.4315/1541-9576-41.1.36
Bacillus amyloliquefaciens	Kung et al., 2006	*(27)*	https://doi.org/10.1016/j.foodchem.2005.08.025
Bacillus cibi	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Bacillus coagulans	Tsai et al., 2006	*(58)*	https://doi.org/10.1016/j.foodchem.2005.04.036
Bacillus firmus	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Bacillus flexus	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Bacillus licheniformis	Lim, 2016	*(32)*	https://doi.org/10.1186/s41240-016-0040-x
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Bacillus macerans	Rodriguez-Jerez et al., 1994	*(46)*	https://doi.org/10.1006/fmic.1994.1046
Bacillus malacitensis	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Bacillus massiliensis	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Bacillus megaterium	Kung et al., 2006	*(27)*	https://doi.org/10.1016/j.foodchem.2005.08.025
	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
	Tsai et al., 2006	*(58)*	https://doi.org/10.1016/j.foodchem.2005.04.036
Bacillus oleronius	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Bacillus polyfermenticus	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Bacillus spp.	Kung et al., 2006	*(27)*	https://doi.org/10.1016/j.foodchem.2005.08.025
	Simora & Peralta, 2018	*(48)*	https://doi.org/10.33997/j.afs.2018.31.2.001
Bacillus subtilis	Kung et al., 2006	*(27)*	https://doi.org/10.1016/j.foodchem.2005.08.025
	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Bacillus thuringiensis	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Brevibacillus brevis	Tsai et al., 2005	*(57)*	https://doi.org/10.1016/j.foodchem.2004.04.024
Brevibacterium casei	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057

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APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number (cont.)

Bacterial species	Author, y	Ref no.	DOI no.
Citrobacter amalonaticus	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Citrobacter braakii	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Citrobacter farmeri	Narkthewan & Makkapan, 2020	*(37)*	https://doi.org/10.21660/2020.72.5695
Citrobacter freundii	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	DeBeer et al., 2021	*(13)*	https://doi.org/10.4315/1541-9576-41.1.36
	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
	Kung et al., 2012	*(28)*	https://doi.org/10.1016/j.jfda.2014.10.009
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Citrobacter koseri	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
Citrobacter spp.	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
Clostridium irregular	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Clostridium perfringens	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Clostridium spp.	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Cronobacter sakazakii	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Edwardsiella hoshinae	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
Enterobacter aerogenes	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Bjornsdottir-Butler et al., 2015	*(6)*	https://doi.org/10.4315/0362-028X.JFP-15-012
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	DeBeer et al., 2021	*(13)*	https://doi.org/10.4315/1541-9576-41.1.36
	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
	Kung et al., 2012	*(28)*	https://doi.org/10.1016/j.jfda.2014.10.009
	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
	Tsai et al., 2004	*(56)*	https://doi.org/10.4315/0362-028X-67.2.407
	Tsai et al., 2005	*(57)*	https://doi.org/10.4315/0362-028X-68.8.1690
Enterobacter amnigenus	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049

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APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number (cont.)

Bacterial species	Author, y	Ref no.	DOI no.
Enterobacter cloacae	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Kung et al., 2006	*(27)*	https://doi.org/10.1016/j.foodchem.2005.08.025
	Kung et al., 2012	*(28)*	https://doi.org/10.1016/j.jfda.2014.10.009
	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
	Rachmawati et al., 2023	*(44)*	https://doi.org/10.1080/10498850.2023.2219248
	Tsai et al., 2004	*(56)*	https://doi.org/10.4315/0362-028X-67.2.407
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Enterobacter gergovia	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
Enterobacter hormaechei	Kung et al., 2012	*(28)*	https://doi.org/10.1016/j.jfda.2014.10.009
Enterobacter spp.	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
	Rachmawati et al., 2023	*(44)*	https://doi.org/10.1080/10498850.2023.2219248
Enterobacter taylorae	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Enterobacter xianfengensis	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
Enterobacteriaceae	Lavizzari et al., 2010	*(31)*	https://doi.org/10.4315/0362-028X-73.2.385
Enterococcus casseliflavus	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Enterococcus faecalis	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Erwinia persicina	Rachmawati et al., 2023	*(44)*	https://doi.org/10.1080/10498850.2023.2219248
Escherichia coli	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Escherichia hermannii	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
Hafnia alvei	Bang et al., 2009	*(3)*	https://doi.org/10.5352/JLS.2009.19.2.277
	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
	Lavizzari et al., 2010	*(31)*	https://doi.org/10.4315/0362-028X-73.2.385
	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Hafnia paralvei	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Rachmawati et al., 2023	*(44)*	https://doi.org/10.1080/10498850.2023.2219248
Klebsiella aerogenes	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
	Rachmawati et al., 2023	*(44)*	https://doi.org/10.1080/10498850.2023.2219248

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APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number (cont.)

Bacterial species	Author, y	Ref no.	DOI no.
Klebsiella oxytoca	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
	Tsai et al., 2004	*(56)*	https://doi.org/10.4315/0362-028X-67.2.407
Klebsiella pneumoniae	Bang et al., 2009	*(3)*	https://doi.org/10.5352/JLS.2009.19.2.277
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	DeBeer et al., 2021	*(13)*	https://doi.org/10.4315/1541-9576-41.1.36
	Kung et al., 2012	*(28)*	https://doi.org/10.1016/j.jfda.2014.10.009
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Klebsiella pneumoniae subsp. *pneumoniae*	Lavizzari et al., 2010	*(31)*	https://doi.org/10.4315/0362-028X-73.2.385
Klebsiella spp.	Rachmawati et al., 2023	*(44)*	https://doi.org/10.1080/10498850.2023.2219248
Klebsiella variicola	Devivilla et al., 2019	*(14)*	https://doi.org/10.4315/0362-028X.JFP-19-101
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
Lacticaseibacillus casei	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Lacticaseibacillus paracasei	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Lactiplantibacillus plantarum	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Lactobacillus bavaricus	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
Lactobacillus brevis	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Kung et al., 2005	*(29)*	https://doi.org/10.38212/2224-6614.2557
Lactobacillus buchneri	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Fröhlich-Wyder et al., 2013	*(21)*	https://doi.org/10.1016/j.idairyj.2013.03.004
	Stratton et al., 1991	*(50)*	https://doi.org/10.4315/0362-028X-54.6.460
Lactobacillus curvatus	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Kung et al., 2005	*(29)*	https://doi.org/10.38212/2224-6614.2557
Lactobacillus delbrueckii subsp. *lactis*	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Lactobacillus helveticus	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
Lactobacillus hilgardii	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
Lactobacillus mali	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
Lactobacillus para. paracasei	Kung et al., 2005	*(29)*	https://doi.org/10.38212/2224-6614.2557
Lactobacillus parabuchneri	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Fröhlich-Wyder et al., 2013	*(21)*	https://doi.org/10.1016/j.idairyj.2013.03.004
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197

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APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number (cont.)

Bacterial species	Author, y	Ref no.	DOI no.
Lactobacillus paracasei	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Lactobacillus paracollinoides	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
Lactobacillus pentosus	Kung et al., 2005	*(29)*	https://doi.org/10.38212/2224-6614.2557
Lactobacillus plantarum	Kung et al., 2005	*(29)*	https://doi.org/10.38212/2224-6614.2557
Lactobacillus rhamnosus	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
Lactobacillus rossiae	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
Lactobacillus saerimneri 30a	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
Lactobacillus spp.	Kung et al., 2005	*(29)*	https://doi.org/10.38212/2224-6614.2557
Lactococcus garvieae	Bang et al., 2009	*(3)*	https://doi.org/10.5352/JLS.2009.19.2.277
Lactococcus lactis	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Lactococcus lactis subsp. *lactis*	Bang et al., 2009	*(3)*	https://doi.org/10.5352/JLS.2009.19.2.277
Latilactobacillus curvatus	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Latilactobacillus sakei	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Lenticolactobacillus buchneri	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Lenticolactobacillus parabuchneri	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Lentilactobacillus hilgardii	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Lentilactobacillus parabuchneri	Botello-Morte et al., 2022	*(7)*	https://doi.org/10.1016/j.foodcont.2021.108595
Leuconostoc mesenteroides	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
Leuconostoc spp.	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Levilactobacillus brevis	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Limosilactobacillus reuteri	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Limosilactobacillus vaginalis	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Listeria innocua	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
Listonella anguillarum	Podeur, 2014	*(42)*	https://archimer.ifremer.fr/doc/00241/35203/
Lysinibacillus boronitolerans	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Micrococcus spp.	Nor-Khaizura et al., 2009	*(39)*	https://doi.org/10.3136/fstr.15.395
Morganella morganii	Bang et al., 2009	*(3)*	https://doi.org/10.5352/JLS.2009.19.2.277
	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Bjornsdottir-Butler et al., 2015	*(6)*	https://doi.org/10.4315/0362-028X.JFP-15-012
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	DeBeer et al., 2021	*(13)*	https://doi.org/10.4315/1541-9576-41.1.36
	Devivilla et al., 2019	*(14)*	https://doi.org/10.4315/0362-028X.JFP-19-101
	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
	Lavizzari et al., 2010	*(31)*	https://doi.org/10.4315/0362-028X-73.2.385

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APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number (cont.)

Bacterial species	Author, y	Ref no.	DOI no.
Morganella morganii	Lim, 2016	*(32)*	https://doi.org/10.1186/s41240-016-0040-x
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
	Uehara et al., 2021	*(59)*	https://doi.org/10.1007/s13197-021-05092-7
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Morganella psychrotolerans	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	DeBeer et al., 2021	*(13)*	https://doi.org/10.4315/1541-9576-41.1.36
	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
Morganella spp.	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
Neisseria zoodegmatis	Raja et al., 2023	*(45)*	https://doi.org/10.26524/krj.2023.11
Oenococcus oeni	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
Pantoea agglomerans	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
Pantoea dispersa	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
Pantoea spp.	Lavizzari et al., 2010	*(31)*	https://doi.org/10.4315/0362-028X-73.2.385
Pediococcus damnosus	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
Pediococcus parvulus	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Pediococcus pentosaceus	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Photobacterium angustum	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
Photobacterium aquimaris	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Photobacterium damselae	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Uehara et al., 2021	*(59)*	https://doi.org/10.1007/s13197-021-05092-7
Photobacterium damselae subsp. *damselae*	Bjornsdottir-Butler et al., 2015	*(6)*	https://doi.org/10.4315/0362-028X.JFP-15-012
Photobacterium iliopiscarium	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Torido et al., 2012	*(55)*	https://doi.org/10.1016/j.foodcont.2012.01.009
Photobacterium kishitanii	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Photobacterium leiognathi	DeBeer et al., 2021	*(13)*	https://doi.org/10.4315/1541-9576-41.1.36
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197

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APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number (cont.)

Bacterial species	Author, y	Ref no.	DOI no.
Photobacterium phosphoreum	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	DeBeer et al., 2021	*(13)*	https://doi.org/10.4315/1541-9576-41.1.36
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Torido et al., 2012	*(55)*	https://doi.org/10.1016/j.foodcont.2012.01.009
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Photobacterium psychrotolerans	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
Plesiomonas shigelloides	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Pluralibacter pyrinus	Uehara et al., 2021	*(59)*	https://doi.org/10.1007/s13197-021-05092-7
Proteus columbae	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
Proteus marina	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Proteus mirabilis	Ababouch et al., 1991	*(1)*	https://doi.org/10.1016/0740-0020(91)90005-M
	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Devivilla et al., 2019	*(14)*	https://doi.org/10.4315/0362-028X.JFP-19-101
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
	Tsai et al., 2004	*(56)*	https://doi.org/10.4315/0362-028X-67.2.407
Proteus penneri	Devivilla et al., 2019	*(14)*	https://doi.org/10.4315/0362-028X.JFP-19-101
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
	Tsai et al., 2004	*(56)*	https://doi.org/10.4315/0362-028X-67.2.407
Proteus spp.	Ababouch et al., 1991	*(1)*	https://doi.org/10.1016/0740-0020(91)90005-M
Proteus vulgaris	Ababouch et al., 1991	*(1)*	https://doi.org/10.1016/0740-0020(91)90005-M
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	DeBeer et al., 2021	*(13)*	https://doi.org/10.4315/1541-9576-41.1.36
	Devivilla et al., 2019	*(14)*	https://doi.org/10.4315/0362-028X.JFP-19-101
	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
	Raja et al., 2023	*(45)*	https://doi.org/10.26524/krj.2023.11
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
	Tsai et al., 2004	*(56)*	https://doi.org/10.4315/0362-028X-67.2.407
Providencia rettgeri	Ababouch et al., 1991	*(1)*	https://doi.org/10.1016/0740-0020(91)90005-M

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APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number (cont.)

Bacterial species	Author, y	Ref no.	DOI no.
Providencia rustigianii	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Devivilla et al., 2019	*(14)*	https://doi.org/10.4315/0362-028X.JFP-19-101
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Raja et al., 2023	*(45)*	https://doi.org/10.26524/krj.2023.11
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
Providencia stuartii	Ababouch et al., 1991	*(1)*	https://doi.org/10.1016/0740-0020(91)90005-M
Pseudomonas aeruginosa	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Pseudomonas fluorescens	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Pseudomonas putida	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Simora & Peralta, 2018	*(48)*	https://doi.org/10.33997/j.afs.2018.31.2.001
Pseudomonas spp.	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
	Nor-Khaizura et al., 2009	*(39)*	https://doi.org/10.3136/fstr.15.395
Pseudomonas syringae	Simora & Peralta, 2018	*(48)*	https://doi.org/10.33997/j.afs.2018.31.2.001
Psychrobacter pulmonis	Devivilla et al., 2019	*(14)*	https://doi.org/10.4315/0362-028X.JFP-19-101
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
Rahnella agnatilis	Tsai et al., 2004	*(56)*	https://doi.org/10.4315/0362-028X-67.2.407
Rahnella spp.	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
Raoultella ornithinolytica	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Kung et al., 2012	*(28)*	https://doi.org/10.1016/j.jfda.2014.10.009
	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Uehara et al., 2021	*(59)*	https://doi.org/10.1007/s13197-021-05092-7
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Raoultella planticola	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Bjornsdottir-Butler et al., 2015	*(6)*	https://doi.org/10.4315/0362-028X.JFP-15-012
	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Zhernov et al., 2023	*(61)*	https://doi.org/10.3390/ijms24010809
Raoultella spp.	Firth et al., 2023	*(20)*	https://doi.org/10.1128/spectrum.04720-22
Salmonella enterica	Simora & Peralta, 2018	*(48)*	https://doi.org/10.33997/j.afs.2018.31.2.001

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APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number (cont.)

Bacterial species	Author, y	Ref no.	DOI no.
Serratia fonticola	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Serratia liquefaciens	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Rachmawati et al., 2023	*(44)*	https://doi.org/10.1080/10498850.2023.2219248
Serratia marcescens	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Lim, 2016	*(32)*	https://doi.org/10.1186/s41240-016-0040-x
	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Serratia spp.	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
Shewanella baltica	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
Shewanella haliotis	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
Shewanella putrefaciens	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
Shewanella spp.	Ginigaddarage et al., 2023	*(22)*	http://dx.doi.org/10.4038/jnsfsr.v51i2.10819
Shigella flexneri	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Rachmawati et al., 2023	*(44)*	https://doi.org/10.1080/10498850.2023.2219248
Sphingomonas paucimobilis	Raja et al., 2023	*(45)*	https://doi.org/10.26524/krj.2023.11
Staphylococcus aureus	Simora & Peralta, 2018	*(48)*	https://doi.org/10.33997/j.afs.2018.31.2.001
Staphylococcus capitis	Kung et al., 2006	*(27)*	https://doi.org/10.1016/j.foodchem.2005.08.025
	Tembhurne et al., 2013	*(52)*	http://dx.doi.org/10.4236/aim.2013.37072
Staphylococcus epidermidis	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Staphylococcus hominis	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Staphylococcus intermedius	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Staphylococcus kloosii	Narkthewan & Makkapan, 2020	*(37)*	https://doi.org/10.21660/2020.72.5695
Staphylococcus pasteuri	Kung et al., 2006	*(27)*	https://doi.org/10.1016/j.foodchem.2005.08.025
			https://doi.org/10.1016/j.foodchem.2005.12.057
	Kung et al., 2012	*(28)*	https://doi.org/10.1016/j.jfda.2014.10.009
Staphylococcus saprophyticus	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Staphylococcus sciuri	Kung et al., 2012	*(28)*	https://doi.org/10.1016/j.jfda.2014.10.009
Staphylococcus spp.	Nor-Khaizura et al., 2009	*(39)*	https://doi.org/10.3136/fstr.15.395
Staphylococcus xylosus	Kung et al., 2015	*(26)*	https://doi.org/10.1016/j.jfda.2014.10.009
	Lim, 2016	*(32)*	https://doi.org/10.1186/s41240-016-0040-x
	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
Streptococcus faecalis	Tham, 1988	*(53)*	https://doi.org/10.1016/0168-1605(88)90002-5
Streptococcus faecium	Tham, 1988	*(53)*	https://doi.org/10.1016/0168-1605(88)90002-5
Streptococcus thermophilus	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
	Calles-Enríquez et al., 2010	*(8)*	https://doi.org/10.1128/AEM.00827-10
	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Tetragenococcus halophilus	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
	Botello-Morte et al., 2022	*(7)*	https://doi.org/10.1016/j.foodcont.2021.108595

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APPENDIX B. Histamine-forming bacteria, author and year, reference number, and DOI number (cont.)

Bacterial species	Author, y	Ref no.	DOI no.
Tetragenococcus halophilus	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
	Ma et al., 2023	*(33)*	https://doi.org/10.1128/aem.01884-22
	Sitdhipol et al., 2013	*(49)*	https://doi.org/10.1007/s13213-012-0529-1
Tetragenococcus muriaticus	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
	Sitdhipol et al., 2013	*(49)*	https://doi.org/10.1007/s13213-012-0529-1
Tetragenococcus spp.	Comas-Basté et al., 2019	*(10)*	https://doi.org/10.5772/intechopen.84333
	Ferrante & Mercogliano, 2023	*(18)*	https://doi.org/10.1016/j.foodchem.2023.136046
Vibrio alginolyticus	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
	Nevado et al., 2023	*(38)*	https://doi.org/10.1016/j.jfp.2023.100049
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Simora & Peralta, 2018	*(48)*	https://doi.org/10.33997/j.afs.2018.31.2.001
Vibrio anguillarum	Tolmasky et al., 1995	*(54)*	https://doi.org/10.1111/j.1365-2958.1995.tb02223.x
Vibrio fluvialis	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
Vibrio halodenitrificans	Naila et al., 2011	*(36)*	https://doi.org/10.1016/j.foodchem.2011.03.057
Vibrio harveyi	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Vibrio mimicus	Bjornsdottir et al., 2009	*(5)*	https://doi.org/10.4315/0362-028X-72.9.1987
Vibrio olivaceus	Bang et al., 2009	*(3)*	https://doi.org/10.5352/JLS.2009.19.2.277
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
Vibrio parahaemolyticus	Kim et al., 2001	*(24)*	https://doi.org/10.4315/0362-028X-64.10.1556
	Oktariani et al., 2022	*(40)*	https://doi.org/10.3390/microorganisms10061197
	Simora & Peralta, 2018	*(48)*	https://doi.org/10.33997/j.afs.2018.31.2.001
Vibrio spp.	Ababouch et al., 1991	*(1)*	https://doi.org/10.1016/0740-0020(91)90005-M
Vibrio vulnificus	Qasim, 2023	*(43)*	https://doi.org/10.21931/RB/CSS/S2023.08.01.47
Weissella cibaria	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
Weissella confusa	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017
Weissella paramesenteroides	Barbieri et al., 2019	*(4)*	https://doi.org/10.3390/foods8010017