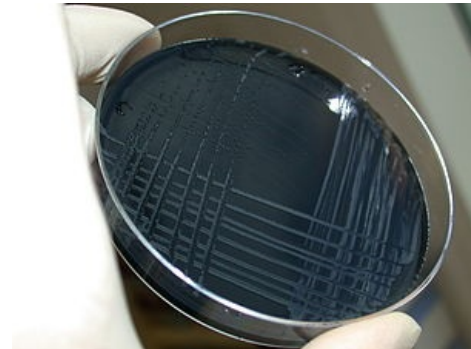


# Campylobacter

*Campylobacter* spp.

*Campylobacteraceae*

*Campylobacter*



Colony *Campylobacter* Jejuni

<b>Morphology</b>	G-sticks
<b>Relation to oxygen</b>	microaerophilic
<b>Cultivation</b>	special cultivation soils
<b>Antigens</b>	membrane protein and lipopolysaccharide antigen, flagellar protein
<b>Source</b>	warm-blooded animals (poultry, pig)
<b>Transmission</b>	ingestion of contaminated food and water, contact with an infected animal, sexual intercourse
<b>Occurrence</b>	gastrointestinal tract of warm-blooded animals
<b>Incubation time</b>	1-7 days
<b>Disease</b>	campylobacter enteritis
<b>Diagnostics</b>	rectal swab and cultivation on selective soils, latex agglutination (presence of antigens in stool), serology
<b>Therapy</b>	rehydration, macrolides, tetracyclines, chloramphenicol, aminoglycosides (ATB only for more serious infections)
<b>MeSH ID</b>	D002167

Template:Infobox - bakterie The genus *Campylobacter* are Gram-negative , thermophilic bacteria adapted to the digestive tract of most warm-blooded animals. It belongs to the family Campylobacteraceae, the order Campylobacterales, the class Epsilon Proteobacteria, the strain Proteobacteria, the domain Bacteria.

The genus includes 18 species , 11 of which have been shown to cause the disease. Pathogenic species are transmissible to humans and cause campylobacter enteritis. The best known members of the genus are *C. jejuni*, *C. coli*, *C. lari*, *C. fetus* and *C. pylori* (now known as *Helicobacter pylori* ).

## Morphology

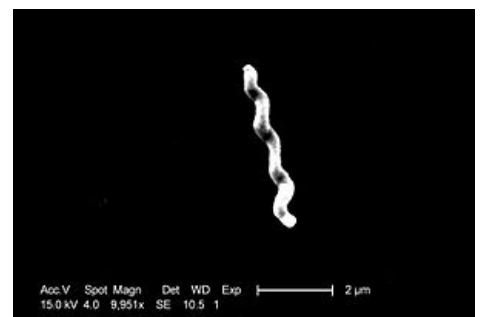
Bacteria of this genus are spiral or curved non-sporulating **rods**. If they get in adverse conditions, they can form coco-shaped forms. They have **polarly located flagella**, which ensure mobility.

## Cultivation

Campylobacter needs special conditions for its growth. They grow in a **microaerophilic environment**, ie. in a low oxygen environment (usually 5% oxygen and 10% carbon dioxide is used for capture) . They require **special cultivation soils** and sufficient humidity, the optimal temperature is 42-43 ° C . In stool culture, a mixture of antibiotics is added to block the growth of other bacteria present (Skirrow's medium). **They form creeping colonies** within 2-7 days .

Due to these growth demands, they were not identified as human pathogens until the end of the 20th century.

## Occurrence and resistance in the environment



*Campylobacter* Jejuni

In nature, microbes of the genus *Campylobacter* are very common, they occur **in the intestines of animals** (mainly pigs - *C. coli* , poultry - *C. jejuni* and *C. lari* and cattle - *C. fetus* ) and in birds. They are **able to survive longer at refrigerator temperatures** (4 ° C) in water, milk, food and faeces; they remain infectious for about 3 weeks. They can be destroyed, for example, by pasteurization, acidic pH or chlorination. They are extremely sensitive to drying and most of the disinfectants used.

## Disease

In animal hosts, campylobacters are usually asymptomatic, but can cause abortions in sheep, for example. In humans, pathogenic species cause campylobacteriosis (most commonly *C. jejuni* ).

*See Campylobacter Enteritis for more information .*

## Links

### Related articles

- Campylobacter Enteritis

### Reference

1. BEDNÁŘ, Marek, Andrej SOUČEK and Věra FRAŇKOVÁ, et al. *Medical microbiology: Bacteriology, virology, parasitology*. 1st edition. Prague: Marvil, 1999. 558 pp. 284-285. ISBN 8023802976 .
2. ↑Jump up to:a b BENEŠ, Jiří, et al. *Infectious medicine*. 1st edition. Galén, 2009. 651 pp. 242-244. ISBN 978-80-7262-644-1 .

### External links

- Centers for disease control and prevention. Campylobacter [online (<https://www.cdc.gov/nczved/divisions/dfbmd/diseases/campylobacter/>)]. [cit. 2014-06-02]]
- World health organization. Campylobacter [online (<http://www.who.int/en/news-room/fact-sheets/detail/campylobacter>),]. [cit. 2014-06-03]]

### Resources

- BENEŠ, Jiří. *Infectious medicine*. 1st edition edition. Galén, 2009. 651 pp. ISBN 978-80-7262-644-1 .
- JURAJDA, Vladimír. *Poultry and bird diseases: bacterial and fungal infections*. 1st edition. Brno: Veterinární a Farmaceutická univerzita, 2003. 185 pp. ISBN 80-7305-464-7 .
- BEDNÁŘ, Marek, Andrej SOUČEK and Věra FRAŇKOVÁ, et al. *Medical microbiology: Bacteriology, virology, parasitology*. 1st edition. Prague: Marvil, 1996. 558 pp. ISBN 8023802976 .

Bacteria	

G +

coke	aerobic	<table><tr><td><i>Micrococcus</i></td><td><i>Micrococcus luteus</i></td></tr><tr><td><i>Rhodococcus</i></td><td><i>Rhodococcus equi</i></td></tr></table>	<i>Micrococcus</i>	<i>Micrococcus luteus</i>	<i>Rhodococcus</i>	<i>Rhodococcus equi</i>	
	<i>Micrococcus</i>	<i>Micrococcus luteus</i>					
	<i>Rhodococcus</i>	<i>Rhodococcus equi</i>					
	facultatively anaerobic	<table><tr><td><i>Enterococcus</i></td><td><i>Enterococcus durans</i> • <i>Enterococcus faecalis</i> • <i>Enterococcus faecium</i></td></tr><tr><td><i>Streptococcus</i></td><td><i>Streptococcus agalactiae</i> • <i>Streptococcus mutans</i> • <i>Streptococcus pneumoniae</i> • <i>Streptococcus pyogenes</i> • <i>Streptococcus suis</i> • <i>Oral streptococci</i></td></tr><tr><td><i>Staphylococcus</i></td><td><i>Staphylococcus aureus</i> • <i>Staphylococcus epidermidis</i> • <i>Staphylococcus intermedius</i> • <i>Staphylococcus saprophyticus</i></td></tr></table>	<i>Enterococcus</i>	<i>Enterococcus durans</i> • <i>Enterococcus faecalis</i> • <i>Enterococcus faecium</i>	<i>Streptococcus</i>	<i>Streptococcus agalactiae</i> • <i>Streptococcus mutans</i> • <i>Streptococcus pneumoniae</i> • <i>Streptococcus pyogenes</i> • <i>Streptococcus suis</i> • <i>Oral streptococci</i>	<i>Staphylococcus</i>
<i>Enterococcus</i>	<i>Enterococcus durans</i> • <i>Enterococcus faecalis</i> • <i>Enterococcus faecium</i>						
<i>Streptococcus</i>	<i>Streptococcus agalactiae</i> • <i>Streptococcus mutans</i> • <i>Streptococcus pneumoniae</i> • <i>Streptococcus pyogenes</i> • <i>Streptococcus suis</i> • <i>Oral streptococci</i>						
<i>Staphylococcus</i>	<i>Staphylococcus aureus</i> • <i>Staphylococcus epidermidis</i> • <i>Staphylococcus intermedius</i> • <i>Staphylococcus saprophyticus</i>						
anaerobic	<table><tr><td><i>Peptococcus</i></td><td><i>Peptococcus niger</i></td></tr><tr><td><i>Peptostreptococcus</i></td><td><i>Peptostreptococcus anaerobius</i> • <i>Peptostreptococcus prevotii</i> • <i>Peptostreptococcus vaginalis</i></td></tr></table>	<i>Peptococcus</i>	<i>Peptococcus niger</i>	<i>Peptostreptococcus</i>	<i>Peptostreptococcus anaerobius</i> • <i>Peptostreptococcus prevotii</i> • <i>Peptostreptococcus vaginalis</i>		
<i>Peptococcus</i>	<i>Peptococcus niger</i>						
<i>Peptostreptococcus</i>	<i>Peptostreptococcus anaerobius</i> • <i>Peptostreptococcus prevotii</i> • <i>Peptostreptococcus vaginalis</i>						

sticks	aerobic + facultative anaerobic	<table><tr><td><i>Arcanobacter</i></td><td><i>Arcanobacterium haemolyticum</i></td></tr><tr><td><i>Bacillus</i></td><td><i>Bacillus anthracis</i> • <i>Bacillus cereus</i></td></tr><tr><td><i>Corynebacterium</i></td><td><i>Corynebacterium diphtheriae</i> • <i>Corynebacterium jeikeium</i> • <i>Corynebacterium ulcerans</i> • <i>Corynebacterium urealyticum</i></td></tr><tr><td><i>Erysipelothrix</i></td><td><i>Erysipelothrix rhusiopathiae</i></td></tr><tr><td><i>Listeria</i></td><td><i>Listeria monocytogenes</i></td></tr><tr><td><i>Nocardia</i></td><td><i>Nocardia asteroides</i> • <i>Nocardia brasiliensis</i></td></tr><tr><td><i>Rhodococcus</i></td><td><i>Rhodococcus equi</i></td></tr></table>	<i>Arcanobacter</i>	<i>Arcanobacterium haemolyticum</i>	<i>Bacillus</i>	<i>Bacillus anthracis</i> • <i>Bacillus cereus</i>	<i>Corynebacterium</i>	<i>Corynebacterium diphtheriae</i> • <i>Corynebacterium jeikeium</i> • <i>Corynebacterium ulcerans</i> • <i>Corynebacterium urealyticum</i>	<i>Erysipelothrix</i>	<i>Erysipelothrix rhusiopathiae</i>	<i>Listeria</i>	<i>Listeria monocytogenes</i>	<i>Nocardia</i>	<i>Nocardia asteroides</i> • <i>Nocardia brasiliensis</i>	<i>Rhodococcus</i>	<i>Rhodococcus equi</i>	
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	<i>Bacillus</i>	<i>Bacillus anthracis</i> • <i>Bacillus cereus</i>															
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	anaerobic	<table><tr><td><i>Actinomyces</i></td><td><i>Actinomyces israeli</i> • <i>Actinomyces naeslundii</i></td></tr><tr><td><i>Bifidobacterium</i></td><td><i>Bifidobacterium dentium</i></td></tr><tr><td><i>Clostridium</i></td><td><i>Clostridium botulinum</i> • <i>Clostridium difficile</i> • <i>Clostridium novyi</i> • <i>Clostridium tetani</i> • <i>Clostridium perfringens</i> • <i>Clostridium septicum</i> • <i>Clostridium ulcerans</i></td></tr><tr><td><i>Lactobacillus</i></td><td><i>Lactobacillus acidophilus</i></td></tr><tr><td><i>Propionibacterium</i></td><td><i>Propionibacterium acnes</i> • <i>Propionibacterium propionicus</i></td></tr></table>	<i>Actinomyces</i>	<i>Actinomyces israeli</i> • <i>Actinomyces naeslundii</i>	<i>Bifidobacterium</i>	<i>Bifidobacterium dentium</i>	<i>Clostridium</i>	<i>Clostridium botulinum</i> • <i>Clostridium difficile</i> • <i>Clostridium novyi</i> • <i>Clostridium tetani</i> • <i>Clostridium perfringens</i> • <i>Clostridium septicum</i> • <i>Clostridium ulcerans</i>	<i>Lactobacillus</i>	<i>Lactobacillus acidophilus</i>	<i>Propionibacterium</i>	<i>Propionibacterium acnes</i> • <i>Propionibacterium propionicus</i>					
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<i>Lactobacillus</i>	<i>Lactobacillus acidophilus</i>																
<i>Propionibacterium</i>	<i>Propionibacterium acnes</i> • <i>Propionibacterium propionicus</i>																

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coke	aerobic	<i>Acinetobacter</i>		<i>Acinetobacter calcoaceticus</i>	
		<i>Moraxella</i>		<i>Moraxella catarrhalis</i> • <i>Moraxella lacunata</i>	
		<i>Neisseria</i>		<i>Neisseria gonorrhoeae</i> • <i>Neisseria meningitidis</i> • Non-pathogenic species of <i>Neisseria</i>	
anaerobic					
	<i>Veillonella</i>	<i>Veillonella alcalescens</i> • <i>Veillonella parvula</i>			
cocobacilli	aerobic	<i>Rickettsia</i>			<i>Rickettsia prowazekii</i> • <i>Rickettsia rickettsii</i> • <i>Rickettsia typhi</i>
	aerobic	<i>Alcaligentes</i>		<i>Alkaligentes feacalis</i>	
		<i>Bartonella</i>		<i>Bartonella bacilliformis</i> • <i>Bartonella henselae</i> • <i>Bartonella quintana</i>	
		<i>Bordetella</i>		<i>Bordetella bronchiseptica</i> • <i>Bordetella parapertussis</i> • <i>Bordetella pertussis</i>	
		<i>Brucella</i>		<i>Brucella abortus</i> • <i>Brucella canis</i> • <i>Brucella melitensis</i> • <i>Brucella suis</i>	
		<i>Burkholderia</i>		<i>Burkholderia cepacia</i> • <i>Burkholderia mallei</i> • <i>Burkholderia pseudomallei</i>	
		<i>Francisella</i>		<i>Francisella tularensis</i>	
		<i>Legionella</i>		<i>Legionella pneumophila</i>	
		<i>Kingella</i>		<i>Kingella denitrificans</i> • <i>Kingella kingae</i> • <i>Kingella oralis</i>	
		<i>Pseudomonas</i>		<i>Pseudomonas aeruginosa</i> • <i>Pseudomonas fluorescens</i>	
		<i>Stenotrophomonas</i>		<i>Stenotrophomonas maltophilia</i>	

sticks	facultatively anaerobic	<i>Actinobacillus</i>	<i>Actinobacillus equuli</i> • <i>Actinobacillus lignieresii</i>
		<i>Aeromonas</i>	<i>Aeromonas caviae</i> • <i>Aeromonas hydrophila</i> • <i>Aeromonas sobria</i>
		<i>Afipia</i>	<i>Afipia felis</i>
		<i>Citrobacter</i>	<i>Citrobacter freundii</i> • <i>Citrobacter koseri</i>
		<i>Eikenella</i>	<i>Eikenella corrodens</i>
		<i>Enterobacter</i>	<i>Enterobacter aerogenes</i> • <i>Enterobacter cloacae</i>
		<i>Escherichia</i>	<i>Escherichia coli</i>
		<i>Haemophilus</i>	<i>Haemophilus ducreyi</i> • <i>Haemophilus haemolyticus</i> • <i>Haemophilus influenzae</i> • <i>Haemophilus parainfluenzae</i>
		<i>Klebsiella</i>	<i>Klebsiella granulomatis</i> • <i>Klebsiella oxytoca</i> • <i>Klebsiella pneumoniae</i>
		<i>Pasteurella</i>	<i>Pasteurella haemolytica</i> • <i>Pasteurella multocida</i> • <i>Pasteurella ureae</i>
<i>Plesiomonas</i>	<i>Plesiomonas shigelloides</i>		
<i>Proteus</i>	<i>Proteus mirabilis</i> • <i>Proteus vulgaris</i>		
<i>Salmonella</i>	<i>Salmonella</i> Enteritidis • <i>Salmonella</i> Typhi • <i>Salmonella</i> Paratyphi		
<i>Serratia</i>	<i>Serratia marcescens</i>		
<i>Shigella</i>	<i>Shigella boydii</i> • <i>Shigella dysenteriae</i> • <i>Shigella flexneri</i> • <i>Shigella sonnei</i>		
<i>Vibrio</i>	<i>Vibrio cholerae</i> • <i>Vibrio parahemolyticus</i>		
<i>Yersinia</i>	<i>Yersinia enterocolitica</i> • <i>Yersinia pestis</i> • <i>Yersinia pseudotuberculosis</i>		
microaerophilic	<i>Campylobacter</i>	<i>Campylobacter coli</i> • <i>Campylobacter fetus</i> • <i>Campylobacter jejuni</i>	
	<i>Helicobacter</i>	<i>Helicobacter pylori</i>	
anaerobic	<i>Bacteroides</i>	<i>Bacteroides fragilis</i> • <i>Bacteroides vulgatus</i>	
	<i>Fusobacterium</i>	<i>Fusobacterium necrophorum</i> • <i>Fusobacterium nucleatum</i> • <i>Fusobacterium stabile</i>	
	<i>Leptotricha</i>	<i>Leptotricha buccalis</i>	
	<i>Mobiluncus</i>	<i>Mobiluncus curtisii</i> • <i>Mobiluncus mulieris</i>	
<i>Prevotella</i>	<i>Prevotella melaninogenica</i>		
<i>Porphyromonas</i>	<i>Porphyromonas gingivalis</i>		

acid resistant	sticks	aerobic	<i>Mycobacterium</i>	<i>Atypical mycobacteria</i> • <i>Mycobacterium tuberculosis</i> • <i>Mycobacterium leprae</i>
non-stainable G +/-	spiral	strictly aerobic	<i>Leptospira</i>	<i>Leptospira biflexa</i> • <i>Leptospira interrogans</i> • <i>Leptospira parva</i>
		microaerophilic	<i>Borrelia</i>	<i>Borrelia burgdorferi</i> • <i>Borrelia hermsi</i> • <i>Borrelia recurrentis</i> • <i>Borrelia vincenti</i>
		strictly anaerobic	<i>Treponema</i>	<i>Non-pathogenic treponems</i> • <i>Treponema carateum</i> • <i>Treponema pallidum</i> • <i>Treponema phagedenis</i> • <i>Treponema pertenue</i>
Portal: Microbiology				