

Brucella

<i>Brucella</i> spp.	
Brucellaceae	
Brucella	
Brucella melitensis on blood agar	
Morphology	For cocobacilli
Relation to oxygen	strictly aerobic
Cultivation	prolonged blood agar
Antigens	surface L antigen
Source	domestic and wild animals
Transmission	contact with a sick animal, contaminated aerosol and milk
Incubation time	2-4 weeks
Disease	brucellosis
Diagnostics	blood culture, cultivation, serology
Therapy	doxycycline in combination with rifampicin
MeSH ID	D002002

Brucella bacteria are small, gram-negative, strictly aerobic immobile short rods or cocobacilli. They do not form spores. These are typical animal parasites. *B. abortus* , *B. melitensis* , *B. suis* and *B. canis* are pathogenic to humans .

Cultivation and biochemistry

Brucella require an extended cultivation time . Colonies have a glossy moist appearance, can be translucent to cloudy and often show fluorescence. They are catalase positive and oxidase positive. Bacteria produce endotoxin , which in its effects resembles enterobacterial endotoxin .

Disease

See the *Brucellosis* page for more information .

Brucellosis is a typical anthroponosis , the infection is typical in both domestic and wild animals. The site of infection in humans is most often injured skin or conjunctiva, and infection can occur by inhaling a contaminated aerosol or consuming improperly treated milk from sick animals. **Thanks to a careful veterinary inspection, brucellosis has been eradicated in the Czech Republic; today, only imported diseases** occur in our country .

Brucellas are among the **intracellular parasites of phagocytic cells** , in macrophages they are distributed throughout the body. Granulomas subsequently form in the affected organs. The course of the disease varies from species to brucella.

Diagnostics

Diagnosis is more complicated due to non-specific clinical manifestations, it is most often performed using blood culture and serologically. In antibody-based assays, brucellosis show cross-reactivity with *Francisella tularensis* . The most reliable method of diagnosis is cultivation, which is often not successful due to its complexity.

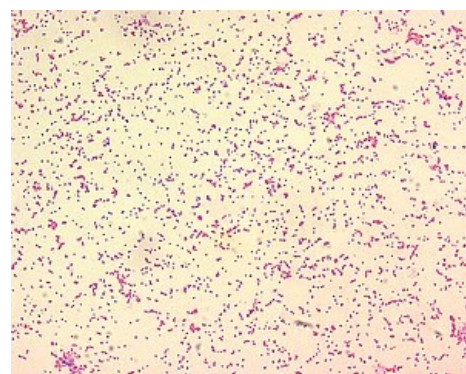
Therapy

The combination of doxycycline with rifampicin is given for six weeks. In children, doxycklin is replaced by co-trimoxazole.

Links

Related articles

- Brucellosis



Brucella spp.

Reference

1. ↑Jump up to:a b c d VOTAVA, Miroslav, et al. *Medical microbiology special*. 1st edition. Brno: Neptun, 2003. 495 pp. ISBN 80-902896-6-5 .
2. ↑Jump up to:a b c BENEŠ, Jiří, et al. *Infectious medicine*. 1st edition. Galén, 2009. 651 pp. ISBN 978-80-7262-644-1 .

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

Go

sticks

facultatively
anaerobic

<i>Actinobacillus</i>	<i>Actinobacillus equi</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 parahaemolyticus</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				