Pathogen Safety Data Sheet

Section 1 - Infectious Agent

Agent Name: **Lactococcus lactis**

Agent Type: Bacteria

Taxonomy:

Family: Streptococcaceae Genus: Lactococcus

Species: *L. lactis*

Subspecies/Strain/Clonal Isolate:

Synonym/Cross Reference
Streptococcus lactis

Characteristics

Brief Description: Lactococcus lactis is a spherical-shaped, Gram-positive bacterium used widely for industrial production of fermented dairy products such as milk, cheese, and yogurt. L. lactis cells are cocci that group in pairs and short chains, and, depending on growth conditions, appear ovoid with a typical length of 0.5 - 1.5 µm. L. lactis does not produce spores (nonsporulating) and are not motile (nonmotile)

Properties: Not applicable

Section 2 - Hazard Identification

Pathogenicity/Toxicity

While Loctococcus lactis is considered nonpathogenic, there have been case reports of infection with L. lactis in immunocompromised adults who presented with endocarditis, liver abscesses, septic arthritis, septicemia, cerebellar abscesses, deep neck infections, osteomyelitis, canaliculitis, and subdural empyema.

Predisposing Factors: Elderly and/or immunocompromised.

Communicability

The route of L. lactis infection is not well understood. Bacterial translocation from the gut is a common source of bacteremia in patients with short bowel syndrome. Exposure to unpasteurized dairy products and immunodepression are thought to be the risk factors for L. lactis infections but they are not always found in medical history.

Epidemiology

L. lactis is a gram-positive bacterium originally isolated from milk and plant surfaces, it is currently used in the dairy industry to make cheese and other fermented foods

Host Range

Natural Host(s): Mammals

Other Host(s): Not applicable

Infectious Dose

Unknown

Incubation Period

Unknown

Section 3 - Dissemination

Reservoir
Milk

Vectors
None

Zoonosis / Reverse Zoonosis
None

Section 4 - Dissemination

Drug Susceptibility
Susceptible to vancomycin

Drug Resistance
Not reported

Susceptibility to Disinfectants
70% ethyl alcohol or 0.125% glutaraldehyde, all with a contact time of 1 minute or 5mg/L of hypochlorite with a contact time of 5 minutes.

Physical Inactivation
Inactivated by heat (100 degrees C for 1 min.) and gamma irradiation.

Survival Outside Host
Unknown

Section 5 - First Aid and Medical

Surveillance
Infection can be confirmed by culturing and identification of bacteria from the infection site. Note: All diagnostic methods are not necessarily available in all countries

First Aid / Treatment
Antibiotic therapy may be required in more serious cases particularly in young, elderly or immunocompromised patients.

Immunization
None

Prophylaxis
None

Section 6 - Laboratory Hazards

Laboratory Acquired Infections
None reported.

Sources / Specimens
It may be a part of the normal flora because it is occasionally isolated from human mucocutaneous surfaces such as intestine.

Primary Hazards
None.

Special Hazards
None.

Section 7 - Exposure Controls and Personal Protection

Risk Group Classification

What is the Risk Group classification in humans and animals for the pathogen?

Human Risk Group Classification RG1 Animal Risk Group Classification RG1

Containment Requirements

Containment Level: CL1

Containment Zone Requirements:

Containment Level 1 facilities, equipment, and operational practices for work involving infectious or potentially infectious materials, animals, or cultures.

Protective Clothing

Lab coat. Gloves when direct skin contact with infected materials or animals is unavoidable. Eye protection must be used where there is a known or potential risk of exposure to splashes.
If there are no special hazards for this agent enter “none”.

Other Precautions

All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC). The use of needles, syringes, and other sharp objects should be strictly limited. Additional precautions should be considered with work involving animals or large scale activities.

Section 8 - Handling and Storage

Spills

Allow aerosols to settle. Wearing protective clothing, gently cover the spill with absorbent paper towel and apply suitable disinfectant, starting at the perimeter and working towards the centre. Allow sufficient contact time before clean up.

Disposal

Decontaminate all wastes that contain or have come in contact with the infectious organism by autoclave, chemical disinfection, gamma irradiation, or incineration before disposing.

Storage

The infectious agent should be stored in appropriately labelled leak-proof containers in a locked area. Containers of infectious material or toxins stored outside the containment zone must be labelled, leakproof, impact resistant, and kept either in locked storage equipment or within an area with limited access.

Section 9 - Regulatory Information

The import, transport, and use of pathogens in Canada is regulated under many regulatory bodies, including the Public Health Agency of Canada, Health Canada, Canadian Food Inspection Agency, Environment Canada, and Transport Canada. Users are responsible for ensuring they are compliant with all relevant acts, regulations, guidelines, and standards.

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References

Risk Group determination from "PHAC Biological Agent Search".

Azouzi, F., et al. Chorioamnionitis due to lactococcus lactis cremoris: A case report. (2015) Care Reports in Women's Health (7):1-2.

Buchelli-Ramirez, H.L., et. al., Necrotising pneumonia caused by Lactococcus lactis cremoris. (2013) Int. J. Tuberc. Lung. Dis. 17(4): 565-567.