Staphylococcus Aureus Gram Stain

Staphylococcus schleiferi is commonly recognized as a veterinary pathogen affecting household pets, but has not been identified as a disease causing organism in large animals. S. schleiferi has been identified as a causative agent of conditions of Pyoderma, Otitis Externa, and Otitis media in both dogs and cats; although more commonly causing inflammatory conditions in dogs than in cats. Human infections have been described in some case reports, resulting in certain disease conditions including: surgical site infections, pediatric meningitis, endocarditis, and intravascular device-related bacteremia. Although both companion animals and humans can acquire disease from this organism, its zoonotic potential is not well... f38201128a Commensal S. epidermidis is an essential part of a healthy skin microbiota. It contributes through... f38201128a == Morphology and classification == f38201128a Staphylococci spp. are a genus of gram positive cocci of 0.5 - 1 µm diameter. Staphylococcus pseudintermedius is a non-motile and non-spore forming, facultatively anaerobic bacterium. It appears primarily as grape-like clusters morphologically, but can also be seen as individual or paired cocci. This clustered configuration, as well as the positive... f38201128a Staphylococcus carnosus is classified under the domain Bacteria, phylum Bacillota, class Bacilli, order Bacillales, family Staphylococcaceae, genus Staphylococcus, and species S. carnosus. The Staphylococcus genus currently comprises over 60 species and subspecies, including S. carnosus. f38201128a

Staphylococcus aureus The bacterium is a worldwide problem in clinical medicine. Staphylococcus aureus is a gram-positive spherically shaped bacterium, a member of the Bacillota, and is a usual member of the microbiota of the body Staphylococcus aureus is a gram-positive spherically shaped bacterium, a member of the Bacillota, and is a usual member of the microbiota of the body, frequently found in the upper respiratory tract and on the skin. Pathogenic strains often promote infections by producing virulence factors such as potent protein toxins, and the expression of a cell-surface protein that binds and inactivates antibodies. Despite much research and development, no vaccine for S. S. aureus has been approved. Although S. aureus is one of the leading pathogens for deaths associated with antimicrobial resistance and the emergence of antibiotic-resistant strains, such as methicillin-resistant S. It is often positive for catalase and nitrate reduction and is a facultative anaerobe, meaning that it can grow without oxygen. aureus (MRSA). aureus usually acts as a commensal of the human microbiota, it can also become an opportunistic pathogen, being a common cause of skin infections including abscesses, respiratory infections such as sinusitis, and food poisoning f38201128a

The nomenclature used here follows the List of Prokaryotic names with Standing in Nomenclature (LPSN). The type species is Staphylococcus aureus, and LPSN recognizes... f38201128a

Staphylococcus schleiferi It is facultatively anaerobic, coagulase-variable, and can be readily cultured on blood agar where the bacterium tends to form opaque, non-pigmented colonies and beta (β) hemolysis. schleiferi (coagulase negative) and Staphylococcus schleiferi subsp. coagulans (coagulase positive). There exists two subspecies under the species S. However, similarities with infections caused by Staphylococcus aureus suggest that the two species Staphylococcus schleiferi is a Gram-positive, cocci-shaped bacterium of the family Staphylococcaceae. schleiferi: Staphylococcus schleiferi subsp. pathogenicity and virulence of Staphylococcus schleiferi f38201128a

== Taxonomy == f38201128a == References == f38201128a

Bacterial cellular morphologies g. Staphylococcus aureus). Staphylococci are irregular (grape-like) clusters of cocci (e. Tetrads are clusters of four cocci arranged within the same plane f38201128a

Gram staining is almost always the first step in the identification of a bacterial group. While Gram staining is a valuable diagnostic tool in both clinical and research settings, not all bacteria can be definitively classified by this technique. This gives rise to gram... f38201128a The genus contains commensal organisms of the skin and mucous membranes of humans and other animals, as well as opportunistic pathogens. S. aureus can cause community- and healthcare-associated infections, and antibiotic-resistant strains such as methicillin-resistant Staphylococcus aureus (MRSA) can cause serious disease. f38201128a

Staphylococcus epidermidis S. It is part of the normal human Staphylococcus epidermidis is a gram-positive bacterium, and one of over 40 species belonging to the genus Staphylococcus. Being part of the normal skin microbiota, S. These infections are generally hospital-acquired. epidermidis is a frequent contaminant of specimens sent to the diagnostic laboratory. Staphylococcus epidermidis is a gram-positive bacterium, and one of over 40 species belonging to the genus Staphylococcus. It is part of the normal human microbiota, typically the skin microbiota, and less commonly the mucosal microbiota and also found in marine sponges. Although S. It is a facultative anaerobic bacteria. epidermidis is not usually pathogenic, patients with compromised immune systems are at risk of developing infection. epidermidis is a particular concern for people with catheters or other surgical implants because it is known to form biofilms that grow on these devices f38201128a

Conversely, gram-negative bacteria cannot retain the violet stain after the decolorization step; alcohol used in this stage degrades the outer membrane of gram-negative bacteria, making the cell wall more porous and incapable of retaining the crystal violet stain. Their peptidoglycan layer is much thinner and sandwiched between an inner cell membrane and a bacterial outer membrane, causing them to take up the counterstain (safranin... f38201128a Gram staining differentiates bacteria by the chemical and physical properties of their cell walls. Gram-positive cells have a thick layer of peptidoglycan in the cell wall that retains the primary stain, crystal violet. Gram-negative cells have a thinner peptidoglycan layer that allows the crystal violet to wash out on addition of ethanol. They are stained pink or red by the counterstain, commonly safranin or fuchsine. Lugol's iodine solution is always added after addition of crystal violet to form a stable complex with crystal violet that strengthens the bonds of the stain with the cell wall. f38201128a

Gram stain Gram stain (Gram staining or Gram's method) is a method of staining used to classify bacterial species into two large groups: gram-positive bacteria and Gram stain (Gram staining or Gram's method) is a method of staining used to classify bacterial species into two large groups: gram-positive bacteria and gram-negative bacteria. The name comes from the

Danish bacteriologist Hans Christian Gram, who developed the technique in 1884. It may also be used to diagnose a fungal infection f38201128a

Some strains of S. epidermidis are highly salt tolerant and commonly found in marine environments. S.I. Paul et al. (2021) isolated and identified salt tolerant strains of S. epidermidis (strains ISP111A, ISP111B and ISP111C) from Cliona viridis sponges of the Saint Martin's Island Area of the Bay of Bengal, Bangladesh. f38201128a The name derives from the Ancient Greek words σταφυλή (staphylē), meaning “bunch of grapes”, and κόκκος (kokkos), meaning “berry” or “grain”, referring to the characteristic cellular arrangement. Alexander Ogston first described clustered cocci in pus from a surgical abscess, and Friedrich Julius Rosenbach subsequently established the genus and distinguished S. aureus from the organism now known as S. epidermidis. f38201128a == Taxonomy == f38201128a An estimated 21% to 30% of the human population are long-term carriers of S. aureus, which... f38201128a

Staphylococcus pseudintermedius S. This includes the identification and diagnosis of antibiotic resistant strains. pseudintermedius is an opportunistic pathogen that secretes immune-modulating virulence factors, has many adhesion factors, and the potential to create biofilms, all of which help to determine the pathogenicity of the bacterium. Diagnoses of S. It is primarily a pathogen Staphylococcus pseudintermedius is a gram-positive spherically shaped bacterium of the genus Staphylococcus found worldwide. Staphylococcus pseudintermedius is a gram-positive spherically shaped bacterium of the genus Staphylococcus found worldwide. More recently, molecular technologies like MALDI-TOF, DNA hybridization and PCR have become preferred over biochemical tests for their more rapid and accurate identifications. It is primarily a pathogen for domestic animals, but has been known to affect humans as well. pseudintermedius have traditionally been made using cytology, plating, and biochemical tests f38201128a

Staphylococcus Cells occur singly, in pairs, tetrads, short chains, and characteristically in irregular, grape-like clusters. Most species are non-motile, non-spore-forming, and facultatively anaerobic. Centers for Staphylococcus is a genus of Gram-positive, spherical bacteria in the family Staphylococcaceae. "Etymologia: Staphylococcus". et1909. 19 (9): 1553. "Staphylococcus aureus basics". doi:10. Emerging Infectious Diseases. (2013). 3201/eid1909 f38201128a

Gram-positive bacteria Gram-positive bacteria have a thick layer of peptidoglycan in their cell wall which retains the stain, unlike the thin layer of peptidoglycan in gram-negative bacteria that does not retain the stain. Gram-positive bacteria are bacteria that give a positive result in the Gram stain test, which is traditionally used to quickly classify bacteria into Gram-positive bacteria are bacteria that give a positive result in the Gram stain test, which is traditionally used to quickly classify bacteria into two broad categories according to their type of cell wall f38201128a

Staphylococcus cohnii Staphylococcus cohnii is a Gram-positive, coagulase-negative member of the bacterial genus Staphylococcus consisting of clustered cocci. The species commonly lives on human skin; clinical isolates have shown high levels of antibiotic resistance. A strain of S. The species commonly Staphylococcus cohnii is a Gram-positive, coagulase-negative member of the bacterial genus Staphylococcus consisting of clustered cocci. cohnii was found to contain a mobile genetic element very similar to the staphylococcal cassette chromosome encoding methicillin resistance element seen in Staphylococcus aureus f38201128a

Gram-positive bacteria retain the crystal violet stain used in the test, resulting in a purple color when observed through an optical microscope. The thick layer of peptidoglycan in the bacterial cell wall retains the stain after it has been fixed in place by iodine. During the decolorization step, the decolorizer removes crystal violet from all other cells. f38201128a

Staphylococcus carnosus It was originally identified in dry sausage and is an important starter culture for meat fermentation. carnosus is nonpathogenic and safely used in the food industry. It was originally identified in Staphylococcus carnosus is a bacterium from the genus Staphylococcus that is both Gram-positive and coagulase-negative. Unlike other members of its genus, such as Staphylococcus aureus and Staphylococcus epidermidis, S. Staphylococcus carnosus is a bacterium from the genus Staphylococcus that is both Gram-positive and coagulase-negative f38201128a