Gram Negative Bacteria Examples

Some genera have been divided based upon the presence or absence of motility. Motility is determined by using a motility medium. The ingredients include motility test medium, nutrient broth powder, NaCl and distilled water. An inoculating needle (not a loop) is used to insert the bacterial sample... e4f92e3513 Generally, the basic morphologies are spheres (coccus) and round-ended cylinders or rod shaped (bacillus). But, there are also other morphologies such as helically twisted cylinders (example Spirochetes), cylinders curved in one plane (selenomonads) and unusual morphologies (the square, flat box-shaped cells of the Archaean genus Haloquadratum). Other arrangements include pairs, tetrads, clusters, chains and palisades. e4f92e3513 Bacterial cells have fewer components than eukarotic cells, and are often easier to manipulate experimentally relative to eukaryotes. Therefore, many biochemical principles were first characterized in bacteria before these principles were subsequently applied to other organisms. e4f92e3513

Sulfur-reducing bacteria Normally, they couple this reaction with the oxidation of acetate, succinate. Several types of bacteria and many non-methanogenic archaea can reduce sulfur. The final product of these processes, sulfide, has a considerable influence on the chemistry of the environment and, in addition, is used as electron donor for a large variety of microbial metabolisms. Only few taxa are true sulfur-reducing bacteria, using sulfur reduction as the only or main catabolic reaction. $S_{n+1}^{2-}+H^{+}$ The Pseudomonadota are a major phylum of gram-negative bacteria. These microbes use inorganic sulfur compounds as electron acceptors to sustain several activities such as respiration, conserving energy and growth, in absence of oxygen. Microbial sulfur reduction was already shown in early studies, which highlighted the first proof of S0 reduction in a vibrioid bacterium from mud, with sulfur as electron acceptor and H2 as electron donor. There is a wide range of metabolisms. Most members are facultative Sulfur-reducing bacteria are microorganisms able to reduce elemental sulfur (S0) to hydrogen sulfide (H2S). The first pure cultured species of sulfur-reducing bacteria, Desulfuromonas acetoxidans, was discovered in 1976 and described by Pfennig Norbert and Biebel Hanno as an anaerobic sulfur-reducing and acetate-oxidizing bacterium, not able to reduce sulfate e4f92e3513

Like all... e4f92e3513

Gram stain 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. 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 e4f92e3513

== Types == e4f92e3513

Pathogenic bacteria of the outer membrane of the cell wall of gram-negative bacteria. This article focuses on the bacteria that are pathogenic to humans. The number of these pathogenic species in humans is estimated to be fewer than a hundred. By contrast, several thousand species are considered part of the gut flora, with a few hundred species present in each individual human's digestive tract. Endotoxins are released when the bacteria lyses, which is why after antibiotic treatment Pathogenic bacteria are bacteria that can cause disease. Most species of bacteria are harmless and many are beneficial but others can cause infectious diseases e4f92e3513

Bacterial cellular morphologies and Moraxella catarrhalis. Examples of gram-positive diplococci are Streptococcus Bacterial cellular morphologies are the shapes that are characteristic of various types of bacteria and often key to their identification. Examples of gram-negative diplococci are Neisseria spp. Diplococci are pairs of cocci. Their direct examination under a light microscope enables the classification of these bacteria (and archaea) e4f92e3513

Bacilli Bacilli are almost exclusively gram-positive bacteria. The name Bacilli, capitalized Bacilli is a taxonomic class of bacteria that includes two orders, Bacillales and Lactobacillales, which contain several well-known pathogens such as Bacillus anthracis (the cause of anthrax). almost exclusively gram-positive bacteria. The name Bacillus, capitalized and italicized, refers to a specific genus of bacteria e4f92e3513

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. e4f92e3513

Bacterial cell structure Bacteria, despite apparent simplicity, have highly organized and efficient cell structures, which allow them to fill many ecological niches. While resembling other prokaryotes,

many features of bacterial cells are unique to bacteria, and not found among archaea or eukaryotes. bacterial cell walls, those of gram-positive bacteria and those of gram-negative bacteria, which are differentiated by their Gram staining characteristics e4f92e3513

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... e4f92e3513 Though the lack of motility might be regarded a disadvantage, some non-motile bacteria possess structures that allow their attachment to eukaryotic cells, like GI mucousal cells. e4f92e3513 The name Bacillus, capitalized and italicized, refers to a specific genus of bacteria. The name Bacilli, capitalized but not italicized, can also refer to a less specific taxonomic group of bacteria that includes two orders, one of which contains the genus Bacillus. When the word is formatted with lowercase and not italicized, 'bacillus', it will most likely be referring to shape and not to the genus at all. e4f92e3513

Gram-negative bacteria Gram-negative bacteria are bacteria that, unlike gram-positive bacteria, do not retain the crystal violet stain used in the Gram staining method of bacterial Gram-negative bacteria are bacteria that, unlike gram-positive bacteria, do not retain the crystal violet stain used in the Gram staining method of bacterial differentiation. Their defining characteristic is that their cell envelope consists of a thin peptidoglycan cell wall sandwiched between an inner (cytoplasmic) membrane and an outer membrane. These bacteria are found in all environments that support life on Earth e4f92e3513

The word "bacillus" (or its plural "bacilli") with a lowercase b is also a generic term to describe the morphology of any rod-shaped bacterium. This general term does not mean that the subject is a member of class Bacilli or genus Bacillus. Thus, it does not... e4f92e3513 == Cell morphology == e4f92e3513 Within this category, notable species include the model organism Escherichia coli, along with various pathogenic bacteria, such as Pseudomonas aeruginosa, Chlamydia trachomatis, and Yersinia pestis. They pose significant challenges in the medical field due to their outer membrane, which acts as a protective barrier against numerous antibiotics (including penicillin), detergents that would normally damage the inner cell membrane, and the antimicrobial enzyme lysozyme produced by animals as part of their innate immune system. Furthermore, the outer leaflet of this membrane contains a complex lipopolysaccharide (LPS) whose lipid A component can trigger a toxic reaction when the bacteria are lysed by immune cells. This reaction may lead to septic shock, resulting in low blood... e4f92e3513

Gram-positive bacteria 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 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. 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 e4f92e3513

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... e4f92e3513 == Ambiguity == e4f92e3513

Bacteria The names originate from the reaction of cells to the Gram stain, a long-standing Bacteria are ubiquitous, mostly free-living organisms often consisting of one biological cell. They constitute a large domain of prokaryotic microorganisms. Most bacteria have not been characterised and there are many species that cannot be grown in the laboratory. The nutrient cycle includes the decomposition of dead bodies; bacteria are responsible for the putrefaction stage in this process. that classify bacteria into Gram-positive bacteria and Gram-negative bacteria. Bacteria also live in mutualistic, commensal and parasitic relationships with plants and animals. Bacteria play a vital role in many stages of the nutrient cycle by recycling nutrients and the fixation of nitrogen from the atmosphere. Bacteria inhabit the air, soil, water, acidic hot springs, radioactive waste, and the deep biosphere of Earth's crust. The study of bacteria is known as bacteriology, a branch of microbiology. Typically a few micrometres in length, bacteria were among the first life forms to appear on Earth, and are present in most of its habitats. In the biological communities surrounding hydrothermal vents and cold seeps, extremophile bacteria provide the nutrients needed to sustain life by converting dissolved compounds, such as hydrogen sulphide and methane, to energy e4f92e3513

Several related concepts make use of similar words, and the ambiguity can create considerable confusion. The term "Bacillus" (capitalized and italicized) is also the name of a genus (Bacillus anthracis) that, among many other genera, falls within the class Bacilli. e4f92e3513 Pathogenic bacteria are specially adapted and endowed with mechanisms for overcoming the normal body defences, and can invade parts of the body, such as the blood, where bacteria are not normally found. Some pathogens invade only the surface epithelium... e4f92e3513 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. e4f92e3513 The body is continually exposed to many species of bacteria, including beneficial commensals, which grow on the skin and mucous membranes, and saprophytes, which grow mainly in the soil and in decaying matter. The blood and tissue fluids contain nutrients sufficient to sustain the growth of many bacteria. The body has defence mechanisms that enable it to resist microbial invasion of its tissues and give it a natural immunity or innate resistance against many microorganisms. e4f92e3513

Non-motile bacteria Motility is one characteristic used in the identification of bacteria and evidence of possessing structures: peritrichous flagella, polar flagella and/or a combination of both. Coliform and Streptococci are examples of non-motile bacteria as are Klebsiella pneumoniae, and Yersinia pestis. The cell structures that provide the ability for locomotion are the cilia and flagella. are the cilia

and flagella. Motility Non-motile bacteria are bacteria species that lack the ability and structures that would allow them to propel themselves, under their own power, through their environment. Coliform and Streptococci are examples of non-motile bacteria as are Klebsiella pneumoniae, and Yersinia pestis. When non-motile bacteria are cultured in a stab tube, they only grow along the stab line. If the bacteria are mobile, the line will appear diffuse and extend into the medium e4f92e3513