

# Bioremediation Potentials Of Bacteria Isolated From

Extremophile extraterrestrial life. , environments with conditions approaching or stretching the limits of what known life can adapt to, such as extreme temperature, pressure, radiation, salinity, or pH level. e. Extremophiles are also of interest because of their potential for bioremediation of environments made hazardous to humans due to An extremophile (from Latin extremus 'extreme' and Ancient Greek φιλία (philía) 'love') is an organism that is able to live (or in some cases thrive) in extreme environments, i bc6260634a

Genetically modified bacteria These organisms are now used for several purposes, and are particularly important in producing large amounts of pure human proteins for use in medicine. The large number of custom plasmids make Genetically modified bacteria were the first organisms to be modified in the laboratory, due to their simple genetics. Once a gene is isolated it can be stored inside the bacteria, providing an unlimited supply for research. indefinitely bc6260634a

Halomonas titanicae titanicae may bring about the total deterioration of the Titanic by 2030. It has been estimated by Henrietta Mann, one of the Halomonas titanicae is a gram-negative, halophilic species of bacteria which was isolated in 2010 from rusticles recovered from the wreck of the RMS Titanic. species of bacteria which was isolated in 2010 from rusticles recovered from the wreck of the RMS Titanic. While the bacteria have been identified as a potential danger to oil rigs and other man-made objects in the deep sea, they also have the potential to be used in bioremediation to accelerate the decomposition of shipwrecks littering the ocean floor. It has been estimated by Henrietta Mann, one of the researchers that first isolated it, that the action of microbes like H bc6260634a

Chitinophaga pendula It was first isolated and found in the soil in Japan. This bacteria is known for its ability to degrade chitin, which is a composite polysaccharide found in the cell walls of fungi and the exoskeletons of the majority of arthropods. This bacteria is known for its ability Chitinophaga pendula is a bacteria from the family Chitinophagaceae. It was first isolated and found in the soil in Japan.

This bacteria was discovered in August 2023. *Chitinophaga pendula* is a bacteria from the family Chitinophagaceae. *Chitinophaga pendula* has been studied for its potential applications/uses in bioremediation and the production of chitinase enzymes which can prove extremely useful as a pesticide along with a couple other uses bc6260634a

*Pseudomonas gessardii* These bacteria have a wide range of thermal *Pseudomonas gessardii* is a fluorescent, Gram-negative, rod-shaped bacterium isolated from natural mineral waters in France. *gessardii* has been placed in the P. Based on 16S rRNA analysis, P. first isolated from natural mineral water, it is also found in other environments such as sewage or soil. fluorescens group bc6260634a

Species of *Dyadobacter* have been isolated from a diverse range of environments worldwide, including glacial ice, seawater and factories, however a large number of the currently described species belonging to the genus *Dyadobacter* have been isolated... bc6260634a

*Dyadobacter* Typical traits of the genus include yellow colony colour, positive flexirubin test and non-motile behaviours. with environmental samples rich in hydrocarbonoclastic bacteria for bench-scale bioremediation of oily seawater and desert soil. The type species is *Dyadobacter fermentans*, which was isolated from surface sterilised maize leaves, (apparently named after its ability to ferment glucose and fructose). They possess an anaerobic metabolism (oxidase positive), can utilise a broad range of carbon sources, and test positive for peroxide catalase activity. “Environmental Science *Dyadobacter* is a genus of gram negative rod-shaped bacteria belonging to the family Spirosomaceae in the phylum Bacteroidota bc6260634a

Since the definition of an extreme environment is relative to an arbitrarily defined standard, often an anthropocentric one, these organisms can be considered ecologically dominant in the evolutionary history of the planet. Dating back to more than 40 million years ago, extremophiles have continued to thrive in the most extreme conditions, making them one of the most abundant lifeforms. The study of extremophiles has expanded human knowledge... bc6260634a

Bacteria In the biological communities surrounding hydrothermal vents and cold seeps, extremophile bacteria. They constitute a large domain of prokaryotic microorganisms. In the chemical industry, bacteria are most important in the production of enantiomerically

Bacteria ( ; sg. : bacterium) are ubiquitous, mostly free-living organisms often consisting of one biological cell. 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. 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. Bacteria are also used for the bioremediation of industrial toxic wastes. The nutrient cycle includes the decomposition of dead bodies; bacteria are responsible for the putrefaction stage in this process bc6260634a

*Shewanella oneidensis* MR-1 is a widely used laboratory model to study anaerobic respiration of metals and other anaerobic extracellular electron acceptors, and for teaching about microbial electrogenesis and... bc6260634a *Pseudomonas teessidea* has been isolated from Ekoln, lake Mälaren, in Sweden. bc6260634a

Hydrocarbonoclastic bacteria Bacterial genera such Hydrocarbonoclastic bacteria (also known as hydrocarbon degrading bacteria, oil degrading bacteria or HCB) are a heterogeneous group of prokaryotes which can degrade and utilize hydrocarbon compounds as source of carbon and energy. studies have provided information on 25 kinds of hydrocarbon-degrading bacteria and 25 kinds of fungi isolated from marine environments. Despite being present in most of environments around the world, several of these specialized bacteria live in the sea and have been isolated from polluted seawater bc6260634a

*Shewanella* bacteria. *Shewanella chilikensis* is a species of the genus *Shewanella* commonly found in the marine sponges of Saint Martin's Island of the Bay of Bengal, Bangladesh. *Shewanella* consists of facultatively anaerobic Gram-negative rods, most of which are found in extreme aquatic habitats where the temperature is very low and the pressure is very high. Some species within it were formerly classed as *Alteromonas*. The metal-reducing capabilities can potentially be applied to bioremediation of uranium-contaminated groundwater, with the reduced form of uranium *Shewanella* is the sole genus included in the marine bacteria family *Shewanellaceae*. *Shewanella* bacteria are a normal component of the surface flora of fish and are implicated in fish spoilage bc6260634a

*Pseudomonas teessidea* S. {{cite journal}}: Cite *Pseudomonas teessidea* is a species of *Pseudomonas* bacteria which was first

discovered in the North of England. (2016-06-25). M. &quot;Bioremediation of acid mine drainage and Biosurfactants from Pseudomonas teessidea&quot;. K. The specific epithet teessidea was given by a microbiologist at Teesside University. This bacterium has unique properties developed in response to the contaminated soil from which it comes. It produces rhamnolipids, which are biosurfactants which detoxify oil and chemicals contaminants in the ground. (Pattanathu), Rahman, P. Surfactants work by reducing surface tension between two liquids or a liquid and a solid  
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