

Biology and technology at high temperatures

[Science](#), [Biology](#)



Hubert stated that a source of the bacteria could be the oil reservoir and another could be that the fluid circulation through the ocean crust at the spreading ridges where hydrothermal vents are present. While these spores are extremely helpful in tracking down marine hot spots, they also offer new information about the wildlife and everything about the different variety of things here in the biosphere.

The bacterial species found in the environment hide many of the minor groups of bacteria that apparently don't seem to participate in the functioning of the ecosystem. These dormant thermophiles can be a useful key in understanding how diverse is the marine ecosystem and how well it is maintained by the submissive spreading of cells over a large area. These arctic thermophiles can be the holders of great and important clues to solve the broader riddle of biogeography and biodiversity.

The thermophiles are a form of bacteria that live and breed in hot places and kill organisms around them (Kristjánsson; p 43). These are grouped into two types, either Prokaryotes or Eukaryotes. They breed in temperatures that range between 50C to 70C. Studying these organisms is not easy because they require extremely hot conditions to survive and breed further (Wiegel & Adams; p 76). Thermophiles live in heated habitats or environments that are geothermal. Garbage dumps and landfills and places where decay occurs are some examples of places that are abundant in thermophiles (Reysenbach, Voytek & Mancinelli; p 87) they have classified in the group " archaea", which is divided into prokaryotes and eukaryotes (Robb; p 14).

Prokaryotes are organisms, or bacteria, that don't have a nucleus or any other organelle. They are unicellular, but some of them like " myxobacteria"

have multicellular life cycle stages. The name “ prokaryote” means “ before the nucleus”.

Fig: Prokaryotic cell (left) & Eukaryotic cell (right) with their parts labeled.

They are classified according to the temperature they breed in. a further classification is made of whether the thermophile lives in an acidic environment and a geothermal environment. The bacteria that live and breed in such an environment is known as “ thermoacidophile” (Rawlings & Johnson). Thermophiles reproduce through the process of asexual reproduction. This is done through cell division or mitosis (Brock; p 90).

There are two kinds of Thermophiles, the Thermus and Thermococcus. They are used in DNA fingerprinting and used in the identification of people.

Another thermophile, is used in biological detergents (Rose & Wilkinson; p 86) thermophiles that live in garbage dumps and such places that are self-heating, require organic matter so they can breed. The matter in which they grow is a rich source of nutrients and plants use it as food (Barton p 102).