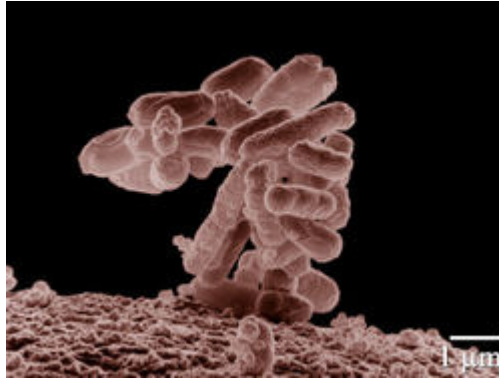


Microorganism



E. coli magnified 10,000 times.

A **microorganism** or **microbe** is an [organism](#) that is [microscopic](#) (invisible to the naked eye). Microorganisms are often described as single-[celled](#), or **unicellular** organisms; however, some unicellular [protists](#) are visible to the naked eye, and some multicellular species are microscopic. The study of microorganisms is called [microbiology](#).

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Microorganisms and unicellular organisms



[Marburg virus](#) magnified approximately 100,000 times.

Microorganisms can be found almost anywhere in the [taxonomic](#) organisation of life on the planet. Unicellular organisms carry out all the functions of life. [Bacteria](#) and [archaea](#) are almost always microscopic, whilst a number of [eukaryotes](#) are also microscopic, including most [protists](#) and a number of [fungi](#). Unicellular [species](#) are those whose members consist of a single [cell](#) throughout their life cycle. This qualification is significant since most [multicellular](#) organisms consist of a single cell at the beginning of their life cycles. Unicellular organisms usually contain only a single copy of their [genome](#) when not undergoing [cell division](#), although some organisms have multiple [cell nuclei](#) (see [coenocyte](#)).

[\[edit\]](#)

Habitats and ecology

Microorganisms are found in virtually every [habitat](#) present in nature. Even in hostile environments such as the [poles](#), [deserts](#), [geysers](#), [rocks](#), and the [deep sea](#), some types of microorganisms have adapted to the extreme conditions and sustained colonies; these organisms are known as [extremophiles](#). Some extremophiles have been known to survive for a prolonged time in a [vacuum](#), and some are unusually resistant to [radiation](#). Many types of microorganisms have intimate [symbiotic](#) relationships with other larger organisms; some of which are mutually beneficial ([mutualism](#)), while others can be damaging to the [host](#) organism ([parasitism](#)). If microorganisms can cause [disease](#) in a host they are known as [pathogens](#).

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Importance

Microorganisms are used in [brewing](#), [baking](#) and other [food](#)-making processes. They are also essential tools in [biotechnology](#) and the study of [biochemistry](#), [genetics](#) and [molecular biology](#). They can also be harmful as a significant cause of human disease, and some have uses as [biological weapons](#).

Microorganisms have an important place in all [ecosystems](#) and in most higher-order multicellular organisms (as symbionts). They are vital to the environment, as they participate in the Earth's element cycles (such as the [carbon cycle](#) and [nitrogen cycle](#)). They are also involved in the recycling of other organisms' dead remains (see [decomposition](#)) and waste products.