

Experience the wonders of Himalayan creatures: A majestic Ganges detoxifier

Miss Akanksha Awadhesh Singh, Biotechnologist

Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur Maharashtra

Due to its mystic spirituality and therapeutic properties, the Ganges has gained popularity on a global scale. In a 2018 study, bacteriophages that attack bacterial pathogens were found to completely annihilate the bacterial population in the Ganges. In ancient times, the mountains of the Himalayas were swarming with bacteriophages, which were natural cleaners. In the river, these bacteria were constantly being killed by the bacteriophages present after the glaciers melted, killing the bacteria that was causing the water's impotence. In a metagenomic study, it was revealed that the SAMase gene in the bacteriophage determines the quality of the water. SAMase is mainly active against *Escherichia coli* bacteria that are most prevalent in the river. As a result, significant functions such as DNA methylation and phosphorylation are inhibited, rendering the organism completely inactive. While there are several places in the upper Himalayan ranges where the Ganges is extremely pure, as it makes its way through cities like Benares, Haridwar, and Kanpur, it loses that purity. Cold temperatures do not allow the bacteriophages to survive at all, therefore their numbers decrease in the mid-lower belts of the Ganges, increasing bacteria populations. Limiting the release of waste is an urgent need to preserve the quality of the river. With the progress of genetics over time, CRISPR Cas 9 and other powerful technologies might be able to engineer bacteriophages to survive even under normal conditions. In order to utilize the bacteriophages efficiently, the bacteriophages need to be detected on the nanoscale with aid of nanotools such as nanochip devices that can detect the microbes in minute quantities.

Nature has its own way of self-healing that is quite apparent in the supreme act of bacteriophages. Along with that, there is an emergent need for humans to stop damaging the beauty of nature as it can take a toll on them.

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