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# IIT-BHU's mutant bacteria may free water of arsenic

TIMES NEWS NETWORK

**Varanasi:** Researchers at the School of Biochemical Engineering at IIT (BHU) claim to have discovered a mutant bacterial strain that can tolerate extreme concentration of arsenic. This high resistance power, they believe, can be used to remove arsenic from contaminated water.

The study on the aerobic (oxygen-dependent) and pleomorphic (shape-changing) *Acinetobacter baumannii* and non-pathogenic (not harmful) *Bacillus subtilis* has been conducted by assistant professor Vishal Mishra and research scholar Vipul Kumar Yadav. It has been submitted to the National Center for Biotechnology Information (NCBI) in Maryland, US, which has accorded an accession number (MN197773).

According to Mishra, Ganga water samples were collected from different locations near Assi Ghat and Sant Ravidas Ghat. These samples were used for isolation of arsenic-resistant bacteria. The highly resistant strain was developed by gradually increasing the arsenic concentra-

## STUDY SUBMITTED TO NCBI IN US

tion up to three months

The bacterial identity, Mishra said, was checked by 16s DNA sequencing, which is a very relevant method to identify microbes. The finding may help scientists filter arsenic from water and make it safe for drinking.

Long-term exposure to arsenic in drinking water and food can cause cancer and

skin lesions. It has also been associated with cardiovascular disease and diabetes, says the World Health Organisation.

India, Nepal, China and Bangladesh are very prone to arsenic poisoning because of water contamination. In India, Bengal, Bihar Assam and eastern UP are among the victims.

A report of the water resources ministry says that 19% of Indian population drinks water with lethal levels of arsenic. In other words, around 239 million people across 153 districts in 21 states drink water that contains unacceptably high levels of arsenic.

UP has the largest number of such people at over 70 million. The IIT (BHU) study was carried out to look into this growing problem, Mishra added.