

Novel bacterial strains clear algal toxins from drinking water

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Novel bacterial strains capable of neutralizing toxins produced by blue-green algae have been identified by researchers at Robert Gordon's University, Aberdeen. Aakash Welgama presented the group's findings during the Society for General Microbiology's meeting at Heriot-Watt University, Edinburgh.

Blooms of blue green algae ([cyanobacteria](#)) are found in both fresh and salt [water](#) throughout the world. They produce toxins called microcystins which are released into the water and are easily ingested by animals and humans by drinking, swimming or bathing in [contaminated water](#). Once in the body the toxins attack liver cells causing acute and chronic poisoning. Conventional methods for water treatment such as sedimentation, sand filtration, flocculation and chlorination do not remove microcystins.

The researchers at Robert Gordon's University have identified more than ten bacterial strains capable of metabolizing microcystins, breaking them down into harmless non-toxic materials. The bacteria, *Arthrobacter sp*, *Brevibacterium sp* and *Rhodococcus sp* were able to break down six commonly occurring microcystins. Six of the strains were incubated in river water with variants of the toxin to simulate natural conditions; all six strains were able to degrade the microcystins.

The costs of advanced water purification strategies are beyond most of the world's population," said Mr Welgama, "Using bacteria to remove microcystins from water provides a reliable, cost-effective purification

system, which does not involve any use of harmful chemicals or any other substances harmful to the environment".

Source: Society for General Microbiology

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