

# New non-toxic disinfectant could tackle hospital infections

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A new disinfectant, Akwaton, that works at extremely low concentrations could be used in healthcare settings to help control persistent hospital-acquired infections such as *Clostridium difficile*. The study is reported online in the *Journal of Medical Microbiology*.

Researchers from the Université de Saint-Boniface in Winnipeg, Canada tested the new compound, Akwaton, against bacterial spores that attach to surfaces and are difficult to destroy. Previous work by the group has shown Akwaton is also effective at low concentrations against strains of Meticillin-resistant *Staphylococcus aureus* and *Escherichia coli*.

Spore-forming bacteria include *C. difficile* - a common bacterium found in [healthcare settings](#) whose spores can survive on surfaces for long periods of time. Spores are heat-tolerant and can survive a number of years in a dehydrated state before they are reactivated. Most chemical disinfectants control or prevent spore growth rather than irreversibly destroying them.

The present study showed that Akwaton was able to destroy *Bacillus subtilis* bacterial spores, suspended in water and attached to stainless steel or glass surfaces, at concentrations well below 1% after just 90 seconds' treatment. It was equally as effective at more dilute concentrations (below 0.1%) if left to act for longer periods.

Lead researcher Dr Mathias Oulé, explained the advantages over other chemical compounds currently used against bacterial spores. "Most

disinfectants have to be applied at much higher concentrations – typically between 4-10% - to properly get rid of bacterial spores. Unfortunately such high levels of these compounds may also be harmful to humans and other animals. Akwaton is non-corrosive, non-irritable, odourless and is effective at very low concentrations," he said.

"[Bacterial spores](#) demonstrate a remarkable resistance to physical and chemical agents as well as ordinary antiseptics. On top of this micro-organisms are becoming increasingly resistant to disinfectants as well as antibiotics. Our latest study shows Akwaton is effective at destroying these spores as well as bacteria that are known problems in healthcare environments"

Akwaton is fast-acting and non-toxic for humans at low concentrations. Other studies have shown that the compound is also environmentally safe. "All these properties make it an ideal [disinfectant](#) for hospitals and laboratories. It may also have great value in the food industry to tackle spore-forming food pathogens such as *Bacillus cereus* and [Clostridium perfringens](#)," explained Dr Oulé.

**More information:** [dx.doi.org/10.1099/jmm.0.0047514-0](https://doi.org/10.1099/jmm.0.0047514-0)

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