Copper Development Association

UNIVERSITY OF Southampton

PR802 issued: 4th April 2011

Antibiotic-Resistant Germs Eliminated by Copper in Live Global Broadcast

Today, a live broadcast from the University of Southampton in the UK highlighted, to infection control professionals around the globe, copper's role in reducing the spread of antibiotic-resistant organisms in hospitals.

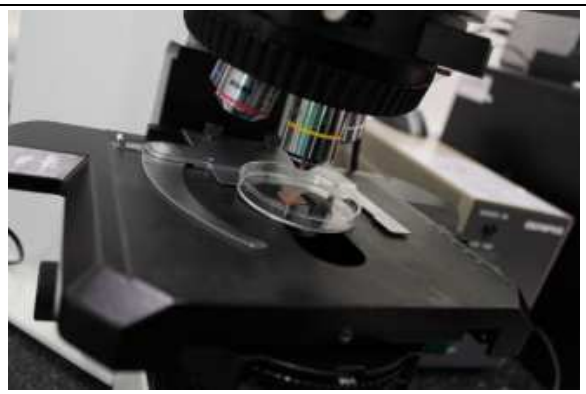
Tying in with the theme of this week's World Health Day – 'Antimicrobial resistance and its global spread' – a live experiment from a laboratory at the University of Southampton used state-of-the-art fluorescent microscopy to show copper eradicating an exceptionally high challenge of MRSA bacteria – one of the notorious antibiotic-resistant superbugs – within minutes.

Microbiologists and clinicians worldwide witnessed tens of thousands of MRSA bacteria perishing rapidly on copper, yet surviving on stainless steel: a material used commonly in hospitals, yet lacking any antimicrobial efficacy. Professor Bill Keevil, Director of Environmental Healthcare at the University of Southampton and leader of the experiment, explained the significance of the result: "Bacteria such as MRSA can survive on ordinary surfaces like door handles, taps and grab rails for days, even months, and be transferred on hands, spreading bacteria to other surfaces or to patients.

"As more resistant bacteria emerge, we're running out of drugs to treat the infections they cause, so we need to do everything practicable to prevent their spread. Copper is a powerful antimicrobial, which quickly and continuously reduces the number of bacteria on its surface. We've demonstrated it here, in the lab, and it's also been shown to be effective in busy clinical environments as part of a set of infection control procedures.

"Changing common touch surfaces in hospitals to copper can help break the chain of infection, leading to a more hygienic environment, which must have a positive impact on the well-being of patients, even in the face of antibiotic-resistant bacteria."

Researcher Emma Goode preparing for the experiment



A copper coupon under the microscope

Notes for Editors:

1. To see the highlights of the webcast, visit www.antimicrobialtouchsurface.com.
2. Approximately 7 million people worldwide acquire a healthcare-associated infection (HAI) each year and, of the 4 million in Europe, around 37,000 die.
3. 10 million MRSA bacteria, stained with a fluorescent dye, were loaded onto a 1cm^2 piece of copper and a 1cm^2 piece of stainless steel (control) to compare survival.
4. This challenge is ten thousand times higher than the number of bacteria normally more typically encountered, e.g. on a hospital door handle.
5. Samples were examined under an Episcopic Differential Interference Contrast (EDIC) microscope which showed live bacteria as bright green dots.
6. The number of green dots were compared each minute for a period of 10 minutes, and the results photographed and displayed on a plasma screen.
7. After 10 minutes, while the number and brightness of green dots remained the same at the start of the experiment on the stainless steel, the copper sample appeared totally black indicating that all the MRSA bacteria were dead.
8. Demonstration participants:
    - Professor Bill Keevil (leader) – Director of Environmental Healthcare, University of Southampton
    - Saul Faust (adjudicator) – Director, Wellcome Trust Clinical Research Facility, University of Southampton
    - Emma Goode and Samuel Collins (conducting the demonstration) – University of Southampton
    - Cathy Smith (presenter)
9. The University of Southampton is a leading UK teaching and research institution with a global reputation for leading-edge research and scholarship across a wide range of subjects in engineering, science, social sciences, health and humanities.

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