

Copper found to be effective at inactivating influenza A virus (H1N1)

Results of a University of Southampton study unveiled at the BIT Life Sciences' 2nd Annual World Summit of Antivirals in Beijing

July 18, 2009, Beijing - New research has found copper to be effective at inactivating Influenza A (including H1N1). The research, led by Dr. C. William Keevil, professor at the University of Southampton was presented at the BIT Life Sciences 2nd Annual World Summit on Antivirals, in Beijing on July 18.

Dr. Keevil's study, involved a series of experiments testing incubation of Influenza A on copper and stainless steel surfaces. Results showed that after incubation for 24 hours on stainless steel, 500,000 virus particles were still infectious, while after only 1 hour of incubation on copper, 75% of the virus was eradicated, and after 6 hours, just 500 particles remained active. Similar antiviral activity was also exhibited against adenovirus.

The findings by Dr. Keevil's research add to earlier studies that have already confirmed the efficacy of copper in killing pathogenic bacteria that include E. coli, Salmonella, and MRSA (superbugs) - one of the most virulent strains of antibiotic-resistant bacteria and a common cause of hospital and community-acquired infections.

The research, unveiled at the World Summit on Antivirals, will contribute to further understanding of copper's antimicrobial qualities, which actively inhibit the growth of bacteria, molds, algae, fungi and viruses.

Dr. Keevil said "With the ongoing threat of contamination by Influenza A viruses, such as H1N1, there is a real and pressing need to utilize all appropriate and effective measures with proven antimicrobial qualities. Studies have now repeatedly shown that the use of copper as a surface material in key public places such as hospitals and food preparation areas may substantially restrict and reduce the spread of harmful infection".

The use of copper as a preventative health measure is becoming increasingly well recognized. The U.S. Environmental Protection Agency has approved the registration of antimicrobial copper alloys, in line with proven public health benefits.

Dr. Keevil added: "These public health benefits, supported by extensive antimicrobial efficacy testing, are underpinned by the fact that copper, brass and bronze are capable of killing harmful and potentially deadly bacteria".

Copper is the first solid surface material to receive this type of EPA registration, with antimicrobial copper alloy surfaces being shown to kill more than 99.9% of specific bacteria (including the MRSA superbug) within two hours, and to continue to kill more than 99% of (these) bacteria even after repeated contamination.

Copper metals, unlike other materials treatments, retain their antibacterial efficacy, offering solid, long-term protection. As a result, copper can play a pivotal role as a control barrier to the spread of harmful pathogens, and supplement standard infection control practices, which will continue to require stringent hygiene controls and development of antiviral vaccines.



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In recognition of these microbial properties, copper is increasingly being used in a variety of products related to public health. The Chinese Center for Disease Control and Prevention, together with ICA, are testing the use of copper in public transportation vehicles through a prototype bus utilizing antimicrobial copper fin-and-tube air conditioners. Discussions are currently underway with domestic household air-conditioning unit manufacturers to launch additional new copper tube-fin products. ICA has also been working with Ningbo Boqiang, one of the parties involved, in setting China's national water dispenser standard, to produce and launch copper tank water dispensers.

ICA is working with manufacturers and local testing organizations to promote ongoing research into applicable uses of copper. ICA is also participating with copper fabricators to improve copper fittings for appliances, as well as cooperating with appliance manufacturers to research and develop end products that will materially enhance public health through containment of infections such as H1N1.

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