

Tri-Air Developments Press Release – MRSA

25th September 2007

‘British Invention could eliminate MRSA from hospitals says Tri-Air Developments’

British scientists have developed an air purifier which new research shows can kill the MRSA ‘super-bug’ and other bacteria and viruses, including H5N1, within minutes. The unit simulates the natural purification properties of fresh air to ensure the continued protection of the hard-to-reach places, such as ceilings, fittings and ventilation ducts, that UK Prime Minister Gordon Brown has targeted in his proposed annual ‘deep clean’ of hospitals – surfaces that cannot be dealt with by day-to-day cleaning.

An independent scientific report published this week confirms that the purification unit is 99.999 per cent effective in killing an airborne test Staphylococcus of the same genus as MRSA in less than two minutes and significantly reduces airborne spores similar to C. difficile in one hour (UK HPA Centre for Emergency Preparedness and Response, Porton Down, Sep 24, 2007).

This process is 100 times more effective than current methods of decontamination, according to inventors Tri-Air Developments - co-founded by the UK’s BRE (Building Research Establishment), microbiologists at Promanade Ltd and technology transfer specialists Inventa Partners Ltd.

More than 5,000 people die from MRSA, or methicillin-resistant staphylococcus aureus, in the UK every year (National Audit Office, 2006). In the USA, MRSA costs US health services an additional \$1.85 billion for the 289,000 patients who are infected each year (Statistical Brief, Agency for Healthcare Research and Quality, USA, February 2007).

Unlike air filtration devices, Tri-Air Developments’ new system simulates the production of fresh air to destroy airborne viruses and bacteria in minutes within any building. This eliminates the dispersal of MRSA and viruses by air currents - which could evade many of the measures already introduced by hospitals to combat the spread of the nosocomial, or hospital-borne infections, according to research by the University of Bath published in the journal ‘Environmental Microbiology’ (Huws S.A., Smith A.W., Enright M.C., Wood P.J., Brown M.R.W., et al. Environmental Microbiology, 2006).

The UK patent was granted 15th May 2007, and with worldwide patents pending, the biotechnology unit uniquely combines three established decontamination technologies to overcome their inherent individual shortcomings, says Tri-Air Developments: non-thermal plasma; ultraviolet catalysis; and OAF (Open Air Factor). This creates a fresh air environment that is lethal to viruses and bacteria, including MRSA, and continually ‘scrubs’ the air clean.

The unit can be readily adapted for a range of medical applications, such as within large ventilation systems or for portable use in a single ward or room. Commercialisation advisors PricewaterhouseCoopers are in discussion with a shortlist of international manufacturing companies in North America, Europe and Asia to structure rights for production.



The unit creates an OAF which is rich in hydroxyl radicals, to destroy microbes including H5N1 flu and cold viruses and bacteria, both in the air and on surface contact. Hydroxyl radicals are found naturally in abundance in outdoor fresh air, with high concentrations in forested mountain areas, and are completely harmless to people.

The decontamination process occurs both within and outside the machine, to create a continual supply of hydroxyl radicals dispersed throughout a room, making it effective even without processing all of the air through the unit.

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