



MICREOS

New data presented at Royal Society of Medicine shows broad applicability of antibiotic alternative

- **Endolysin technology targets only the unwanted bacteria, including antibiotic resistant strains**
- **Experts suggest tackling pathogenic bacteria before colonisation leads to infection in certain patient populations; this can alleviate pressure on antibiotic use**
- **Dutch biotech Microeos presents new data at the Royal Society of Medicine (RSM) Medical Innovations Spring Summit on Saturday 18th April**

[21 April 2015] Microeos spoke on Saturday at the RSM Medical Innovations Programme Spring Summit about the potential of endolysin technology in preventing and treating bacterial infections, even those caused by superbugs, such as MRSA.

At a time when the Department of Health is prioritising the fight against antimicrobial resistance, stressing that there are few public health issues of greater importance¹, Mark Offerhaus (CEO of Microeos) and Bjorn Herpers (Clinical Microbiologist and Medical Advisor at Microeos) discussed the concept of the colonisation-infection continuum, and how endolysin technology can combat pathogenic bacteria *before* colonisation leads to infection, enabling a novel approach to anti-bacterial therapy.

Bacteria interact with the human body across a spectrum of stages, called the colonisation-infection continuum. Antibiotics are not selective in the bacterial species they kill and overuse of antibiotics has driven the emergence of resistance. Therefore, antibiotic use should be limited to the infection stage of this continuum. New data presented at the Royal Society of Medicine showed that Staphefekt™ (an endolysin) kills *Staphylococcus aureus* - including MRSA - without inducing bacterial resistance². Staphefekt™ is specific to its target species, leaving beneficial bacteria unharmed. This makes it suitable for longer-term 'maintenance therapy', as it can be used in the early stages of the colonisation-infection continuum in certain patient populations, for example in *S. aureus*-related skin conditions, such as eczema, acne and rosacea. Data presented on Saturday showed reduced symptoms of inflammation in these conditions³.

Endolysins are enzymes produced by phages, the family of viruses that naturally infect and destroy bacteria. Staphefekt™ is the first endolysin available for human use. It causes lysis of the bacterial cell wall, targeting highly conserved areas; this is why resistance development against endolysins is neither observed nor expected.

Mark Offerhaus (CEO of Microcos) said: “Endolysin technology enables us to deal with the bacteria around us in a completely different way, preserving the beneficial species, and the biodiversity of the bacteria on our skin. This is necessary, and it represents a paradigm shift, allowing for prophylactic and maintenance treatment of bacterial skin diseases at an early stage, alleviating pressure on antibiotics in these indications and preserving antibiotics for when we really need them.”

In vitro and observational in vivo studies have confirmed these characteristics. Laboratory results have shown that lysis of *S. aureus* by Staphefekt™ is specific to *S. aureus*, efficient, and unlikely to induce resistance².

Dr Bjorn Herpers, Clinical Microbiologist, said: “The results demonstrate the potential this technology has for effective action in the earlier stages of the colonisation – infection continuum. The UK Five-Year Antimicrobial Resistance Strategy 2013 to 2018 outlines the need for new strategies for the treatment of bacterial infections, and this could be one of the answers.”

Microcos is looking to ramp up its clinical research, and is keen to collaborate with clinicians and investors to avoid reaching a crisis point for healthcare, where we may not be able to prevent or treat everyday infections or diseases. Products containing Staphefekt for skin-conditions with an infectious component are sold under the Gladskin brand. Staphefekt XDR.300 against *S. aureus* and MRSA is available for research purposes for free in an open source setting.

– ENDS –

For more information contact:

George Hickling GHickling@saycomms.co.uk / 02089716406

Annie Aulds aaulds@saycomms.co.uk

References

- 1) Public England Health, Department of Health, Behaviour change and antibiotic prescribing in healthcare settings, February 2015 p 22-23

- 2) Herpers BI et al. Specific lysis of methicillin susceptible and resistant *Staphylococcus aureus* by the endolysin Staphitekt SA.100™. 24th European Congress of Clinical Microbiology and Infectious Diseases, 2014
- 3) Microeos data on file

Notes to editors

For a video illustrating how endolysins work, see: <https://www.staphitekt.com/en/>

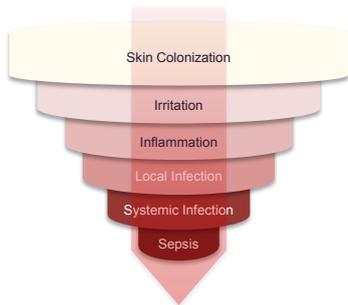
About Microeos

Microeos develops antibacterial solutions based on phage technology as a replacement for antibiotics in health care, veterinary medicine, the food processing industry and agriculture. The company has production facilities in Wageningen and Bilthoven. Microeos has a long-term cooperation with the Swiss technology institute ETH in Zürich. Gladskin is a Microeos Human Health brand for people with skin problems. In The Netherlands and Germany over 10,000 people with skin conditions with an infectious component, such as acne, eczema and rosacea, have used Staphitekt™ in creams and gels, with a user satisfaction rate of over 80% (see: gladskin.com).

Microeos has also developed FDA-approved products for food safety against Salmonella (SALMONELEX™) and Listeria (LISTEX™).

See www.microeos.com for further information.

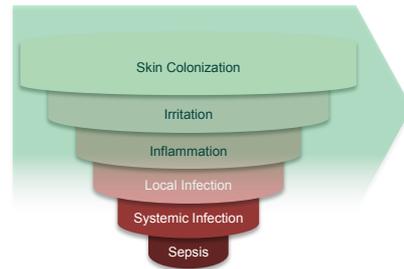
Colonization Infection Continuum



Antibiotics

Side effects
Not selective
Resistance induction

} Use is limited
in time & indication



Staphylokinase / Endolysins

Selective
No resistance induction

} Suitable for long term
suppression therapy
and prophylaxis



Bacteria interact with the human body throughout the colonisation infection continuum. Every alteration at the early stages, either the emergence of resistance or the suppression of pathogens, has its effect downstream. The characteristics of endolysins make them suitable for intervening at the early stages, by controlling colonisation of pathogenic bacteria.