Light activated nanomaterials fighting infections

Development status

Phase 3

Technology validation and implementing it in real environment. Testing the technology outside of the laboratory and its adjustment to external conditions.

IP protection status

CZ patent (CZ303243B6), PCT applications in preparation

Partnering strategy

Collaboration, investment, licensing

Institution

i&i Prague
inventions | investments

i&i Prague

Challenge

Infections that are causally linked to hospitalization of patients are a global problem, especially in developing countries. The basic feature of these infections is increased resistance to antimicrobials and disinfectants. The LAM-X academic spin-off was established to develop nanomaterials useful in the fight against these diseases.

Description

LAM-X develops active nanomaterials that effectively eliminate a wide range of infectious agents trapped on their surfaces. The antimicrobial effect of LAM-X membranes is ensured by a highly reactive form of oxygen (singlet oxygen), which is produced during irradiation with normal visible light. Due to the rate and mechanism of action of singlet oxygen, no antimicrobial resistance develops. The antimicrobial and antiviral activity of the membrane was demonstrated in vitro (E. coli, Staphyl. Aureus, baculoviruses, polyomaviruses). The LAM-X membrane was also successfully tested during a clinical study focused on the treatment of chronic wounds.

Commercial opportunity

LAM-X platform technology can be used in a wide range of applications such as treatment of chronic wounds and burns (wound dressings), disinfection and sterilization of hospital surfaces (filters, self-sterilizing surfaces), food / medical device protection (antimicrobial packaging) . The priority prototype developed by LAM-X is a wound dressings. In response to the global threat of COVID-19, the company is developing anti-virus self-sterilizing filters that can be repetitively used as part of face masks.