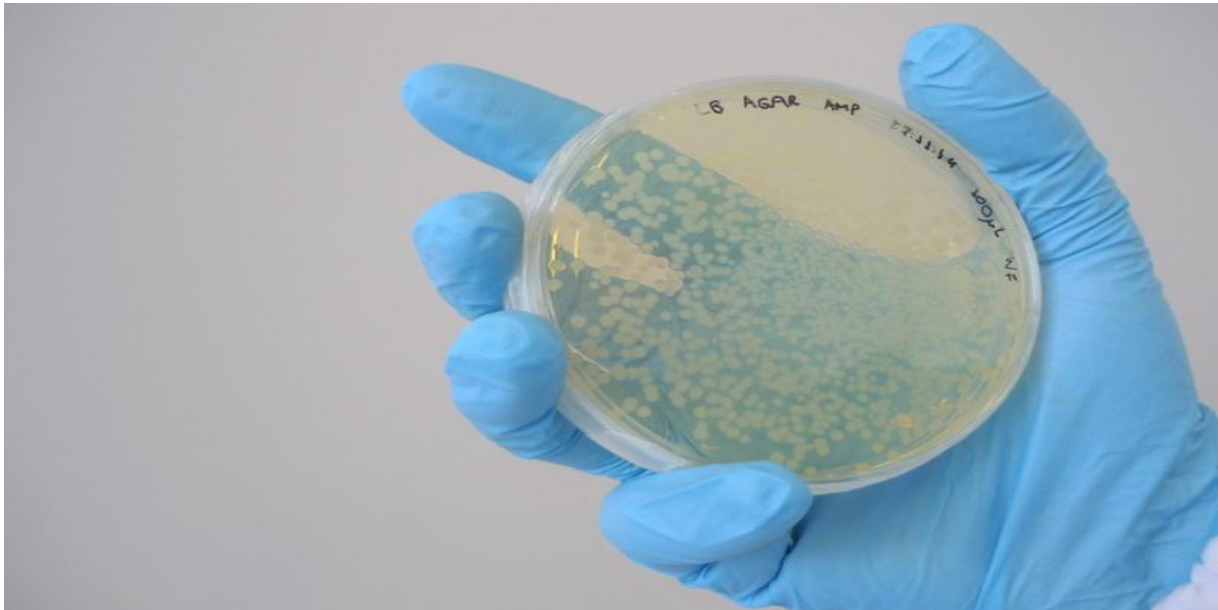




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How nose sensors are being used to fight antimicrobial resistance

ERC Starting Grant 2014



Culture petri dish with bacteria colonies. Courtesy of Dr Ana Cecília Roque.

Antimicrobial resistant bacteria are a global threat to the effective prevention and treatment of an ever-increasing range of infections, causing over 25,000 deaths annually in the EU and costing over €1.5 billion a year.

At present, microbial detection and identification takes between 24 and 36 hours, but for slow-growing bacteria, such as those causing tuberculosis, it can take more than a week. With the support of an ERC Starting Grant, Dr Ana Cecília Roque and her team will develop the urgently needed tools for rapid identification of bacterial infections.

Unusual human odours have been recognised as disease indicators since Hippocrates. Now, Dr Roque will develop bioinspired nose sensors as a fast and needle-free method of microbial detection. The team will research how new types of stimulus-responsive materials will be able to detect and identify bacteria, in particular those most prevalent in human infections and associated with antibiotic resistance.

The research will reduce detection times to a matter of seconds, and the research team hopes that by identifying bacterial infections so much sooner, lives will be saved, antibiotic abuse restrained, and the spread of infection better controlled.

Project details

Principal Investigator: Dr Ana Cecília Roque

Host institution: Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa

Project SCENT: Hybrid Gels for Rapid Microbial Detection

ERC call and funding: Starting Grant 2014, €1.5 million