Now, 'artificial nose' to sniff out bacterial infections!

From ANI

Washington, April 28: Scientists have developed an artificial 'nose' that can diagnose bacterial infections in only a few hours.

The artificial nose is an array of 36 cross-reactive pigment dots that change color when they sense chemicals in the air.

The researchers led by University of Illinois chemistry professor Ken Suslick spread blood samples on Petri dishes of a standard growth gel, attached an array to the inside of the lid of each dish, then inverted the dishes onto an ordinary flatbed scanner.

The dots change color as they react with gases the bacteria produce.

Every 30 minutes, they scanned the arrays and recorded the color changes in each dot. The pattern of color change over time is unique to each bacterium.

"The progression of the pattern change is part of the diagnosis of which bacteria it is. It's like time-lapse photography. You're not looking just at a single frame, you're looking at the motion of the frames over time," said Suslick.

In only a few hours, the array not only confirms the presence of bacteria, but identifies a specific species and strain. It even can recognize antibiotic resistance - a key factor in treatment decisions.

The researchers showed that they could identify 10 of the most common disease-causing bacteria, including the hard-to-kill hospital infection methicillin-resistant Staphylococcus aureus (MRSA), with 98.8 percent accuracy.

However, Suslick believes the array could be used to diagnose a much wider variety of infections.

The study was published in the Journal of the American Chemical Society.
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