

Scientists can now eavesdrop on bacteria

A new breakthrough will help scientists eavesdrop on bacteria and learn how they chat with one another. This finding is likely to lead to new therapeutic discoveries for diseases ranging from cancer to diabetes and allergies.

Pieter C. Dorrestein, pharmacy professor at the University of California-San Diego (UCSD) and Paul Straight of Texas A and M University, utilised a technology called natural product MALDI-TOF imaging mass spectrometry to translate bacterial language.

Bacteria secrete molecules that tell other microbes, in effect: 'I am irritated, stop growing,' or 'I need more nutrients' or 'come closer, I can supply you with nutrients,' said Dorrestein.

Other molecules are secreted that may turn off the body's defence mechanisms. The team led by Dorrestein is currently mapping hundreds of such bacterial interactions.

Microbial signalling have been seen by scientists in terms of an individual, predominant chemical activity.

The new approach, however, enabled UCSD researchers to observe that chemical 'chats' between different species of bacteria, involve many signals that function simultaneously.

'Scientists tend to study the metabolic exchange of bacteria, for example penicillin, one molecule at a time,' said Dorrestein.

'Actually, such exchanges by microbes are much more complex, involving 10, 20 or even 50 molecules at one time. Now scientists can capture that complexity,' he added.

These findings were published in the Sunday issue of Nature Chemical Biology.

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