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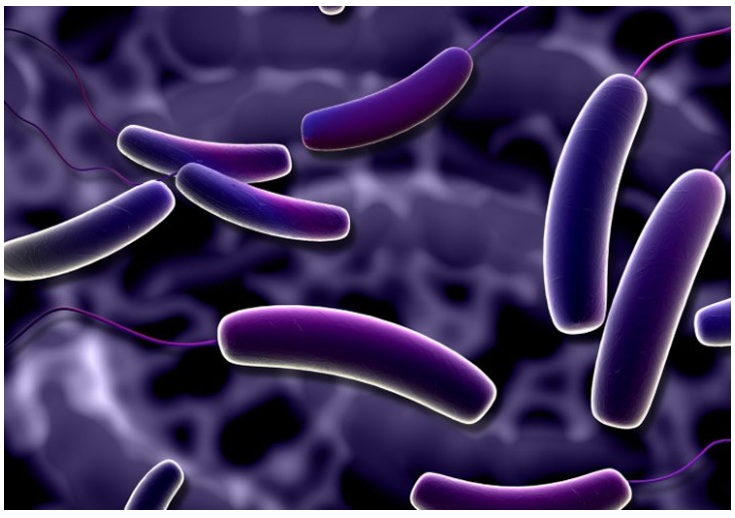
New technique developed to detect microbe vibrations

11 October 2017 | News

The technique, which relies on ultrasensitive piezoelectric sensors, makes it possible to determine the appropriate antibiotics to treat an infection in less than one hour.



Researchers at the National institute of Standards and Technology (NIST) in the US have devised a way of classifying bacteria based on how it vibrates. The technique, which relies on ultrasensitive piezoelectric sensors, makes it possible to determine the appropriate antibiotics to treat an infection in less than one hour.

The technique involves taking some bacteria and smearing them all over a thin quartz disc, which is connected to a pair of electrodes, and a signal noise is generated. The researchers used E. coli bacteria and the antibiotic polymyxin.

After coating the quartz disc in bacteria and observing the expected signal noise, the researchers then administered the antibiotic. Within seven minutes, the noise dropped to near-zero. Repeating the experiment with a different antibiotic, ampicillin, a decrease in noise was detected after 15 minutes.

Next steps include testing the new technique out on more antibiotics and bacteria.