



Identification of Disease Characteristics Using Isotope Ratios in Breath

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a method of using isotope changes in breath to distinguish bacterial infections from viral infections in humans and other animals.

Overview

UW-Madison researchers previously described a method of determining whether or not an animal is suffering from a catabolic change by sampling isotope changes in breath or blood.

The Invention

The researchers now have developed a method of using isotope changes in breath to distinguish bacterial infections from viral infections in humans and other animals. A cavity ringdown spectrometer is used to collect and analyze the isotopes in breath samples taken from a subject over time. A change in the ratio of one stable isotope to another within several hours of exposure to an infectious agent indicates a bacterial infection. On the other hand, a delayed change in isotope ratios, followed by periodic alterations in the ratios, indicates a viral infection.

Applications

- Could provide an immediate-response, point-of-care diagnostic test to determine whether a patient is showing signs of illness due to a bacterial or viral infection, or something else
- Could aid in determining if animals have an infection, helping to prevent large outbreaks, which could result in the loss of an entire herd/flock
- May be used to screen large numbers of patients during a suspected bioterror attack

Key Benefits

- Non-invasive
- Rapid
- Highly accurate
- Relatively inexpensive
- Easy to use
- May replace tests such the rapid test for Strep A
- Potentially useful in developing countries, where clinics have limited laboratory capabilities
- May detect bacterial infection before a patient has shown signs of infection
- Reduces need for prophylactic antibiotic treatment

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Stage of Development

OK



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Successfully tested in chickens.

Additional Information

Related Intellectual Property

- [View Divisional Patent in PDF format.](#)
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Tech Fields

- [Medical Devices : Diagnostics & monitoring tools](#)

For current licensing status, please contact Jeanine Burmania at jeanine@warf.org or 608-960-9846

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