

Northeastern University

News@Northeastern

Office of Marketing and Communications

February 24, 2010

2010-02-24: Breakthrough in tracking a cause of chronic infections

Jenny Eriksen Northeastern University

Recommended Citation

Eriksen, Jenny, "2010-02-24: Breakthrough in tracking a cause of chronic infections" (2010). News@Northeastern. Paper 522. http://hdl.handle.net/2047/d20001765

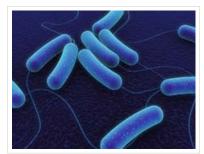
This work is available open access, hosted by Northeastern University.

search news@Northeastern

HOME NEWS ARCHIVES NEWS BY TOPIC CALENDAR MULTIMEDIA FOR MEDIA PROFESSIONALS

news@Northeastern Home News Archives February 2010 Sign up for Daily News News News 1 RSS 1 Twitter 1 Twit

Breakthrough in tracking a cause of chronic infections



Three-dimensional enlarged image of *E. coli* bacterium. *Photo courtesy of Istock/Sebastian*

February 24, 2010

Northeastern University researchers have identified a protein that enables bacterial cells to survive antibiotic treatment.

This discovery by biology professor **Kim Lewis** and his team, published in the February 22 issue of the journal PloS (Public Library of Science) Biology, reveals for the first time the mechanism by which bacteria maintain a chronic infection in spite of aggressive therapy with antibiotics.

Lewis and his team previously discovered that pathogens responsible for chronic infections form small populations of

dormant cells, called persisters, which are not killed by antibiotics. Antibiotics function only on active cells, so when treatment ceases, persisters grow and repopulate, causing a relapse. The protein identified by the Northeastern researchers, known as TisB, triggers a cellular response that leads to the development of persister cells.

"The paradox of chronic infections is that, in many cases, pathogens aren't resistant to antibiotics, yet the antibiotics don't work," said Lewis, director of Northeastern's **Antimicrobial Discovery Center**. "We now better understand what happens inside the cell that enables pathogens to become inactive and cause relapsing infections."

The research was conducted using *E. coli*, a common bacterium found in food and water supplies, and a frequently prescribed antibiotic, ciprofloxacin. Lewis and his team discovered that while the antibiotic was killing most bacteria, it also induced production of TisB in some bacterial cells, which resulted in the formation of persisters.

These findings represent the first time scientists have been able to identify — at the molecular level — how persister cells are formed, said Lewis.

"This is the first step towards understanding the complex workings of how cells evolve to protect themselves," said Lewis. "The more we know, the better equipped we will be to develop counter measures and effective treatments against bacterial infections."

For more information, please contact Jenny Catherine Eriksen at 617-373-2802 or at j.eriksen@neu.edu.

Archives The following news stories and features are available. For information about older content, please contact University Communications and Public Relations at (617) 373-5471. 2010 January February March April May June July August September October November December **Share** f

Sign Up to see what your

friends like.

Like

Northeastern Home | Find Faculty & Staff | Find A-Z | Search © 2010 Northeastern University · 360 Huntington Ave., Boston, Massachusetts 02115 · 617.373.2000 · TTY 617.373.3768

1 of 1 9/22/2011 11:59 AM