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Scientists find origin of ulcer bacteria

CAMBRIDGE, England, Feb. 15 (UPI) -- A British-led team of international scientists has discovered the bacteria causing stomach ulcers has been present in humans for more than 60,000 years.

The finding, say the researchers, not only furthers the understanding of a disease causing bacteria but also offers a new way to study the migration and diversification of early humans. The scientists from the University of Cambridge, the Max Planck Institute in Berlin and the Hanover Medical School, compared DNA sequence patterns of humans and the *Helicobacter pylori* bacteria known to cause most stomach ulcers. They found the genetic differences between human populations that arose as they dispersed from Eastern Africa over thousands of years are mirrored in *H. pylori*.

Human DNA analysis has shown that along the major land routes out of Africa human populations become genetically isolated -- the further from Eastern Africa a population is the more different genetically it is compared to other human populations. Other research has shown gradual differences in European populations, presumed to be the result of Neolithic farmers moving northwards.

The *H. pylori* research team found nearly the same genetic distribution patterns in their results.

The study appears in the journal Nature.

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Related Headlines

Scientists study *Helicobacter pylori* (December 11, 2006) --

PARIS, Dec. 11 (UPI) -- French scientists have outlined the biological role of a potassium channel in a pathogen that colonizes the stomach.

Kerstin Stingl and colleagues at the Pasteur Institute in Paris studied *Helicobacter pylori*, an unusual bacterium that lacks all known potassium uptake systems, but instead has one putative potassium channel, HpKchA.

They showed, for the first time, that channel is essential for potassium uptake into *H. pylori* at low external concentrations, and for colonization of the mucus lining of the stomach. The role of HpKchA as a bulk potassium uptake system represents an adaptation to the hostile, but competitor-free, gastric environment.

The findings follow recent reports that *H. pylori* is involved in several gastric pathologies, including chronic gastritis, gastric and duodenal ulcers and gastric cancer. The scientists say their study's results might have implications for drug development to treat *H. pylori*-associated gastric diseases.

The research appears online in The EMBO Journal.

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E. coli migrating between chimps, humans

CHAMPAIGN, Ill., Feb. 26 (UPI) -- U.S. scientists say people working in chimpanzee research and tourism in a Uganda park are exchanging gastrointestinal bacteria with the animals.

And some of the bacteria being exchanged -- specifically *Escherichia coli* -- are resistant to antibiotics used by humans in Uganda.

The University of Illinois researchers say other studies have found bacterial exchanges between humans and non-human primates. But the scientists say their study is the first to document the exchange of *E. coli* between humans and chimps in a protected wildlife area. It is also the first to find antibiotic-resistant strains in chimpanzees in Africa.

"Antibiotic resistance has traditionally been associated with two factors: indiscriminate and over-prescription of antibiotics by physicians in the developed world and the inclusion of antibiotics in animal feed in the developed world," said Tony Goldberg, a professor of veterinary pathobiology and the principal investigator of the study. The new findings, Goldberg said, show over-the-counter sales of antibiotics for human consumption can also have an impact on wildlife.

The research is to appear in the April issue of the journal Biological Conservation, which is available at the journal's Web site.

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Study likens human skin to a zoo (February 6, 2007) -- Study likens human skin to a zoo

NEW YORK, Feb. 6 (UPI) -- U.S. medical researchers say human skin -- the largest organ in the body -- is a kind of zoo, and some of the inhabitants are quite novel. Scientists at New York University School of Medicine took swabs from the forearms of six healthy individuals to study the bacterial populations in human skin. They found evidence of 182 species of bacteria, 8 percent of which were unidentified species that had never before been described.

Dr. Martin Blaser, a professor of microbiology and one of the study's authors, said the research is the first to identify the composition of bacterial populations on the skin using a powerful molecular method.

Dr. Zhan Gao, senior research scientist in Blaser's lab, led the research that took more than three years to complete.

Some of the bacteria on the skin appear to be more or less permanent residents; others are transient, according to the investigation that's part of an emerging effort to study human microbial ecology.

The study appears in the online edition of the Proceedings of the National Academy of Sciences.

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