

Study of an ancient bacterial gene sheds light on movement of North American peoples

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(PhysOrg.com) -- DNA from the stomach bacteria of a young man who died hundreds of years ago is shedding light on movement patterns of North American peoples and when they came in contact with Europeans.

University of Saskatchewan researcher Treena Swanston worked with [Helicobacter pylori DNA](#) amplified from the stomach tissue of a young man who died between 340 and 160 years ago on a glacier high in the mountains of Tatshenshini-Alsek Park in British Columbia.

Members of the Champagne and Aishihik First Nations, on whose traditional lands he was found, named the site Kwäday Dän Ts'ınchi, or "Long Ago Person Found." The individual is estimated to have been 18 or 19 years old when he died. Swanston's work was undertaken in collaboration with these First Nations.

H. pylori is a common stomach bacteria, present in about half of all people. High levels of *H. pylori* infections have been identified in the circumpolar region, and Canadian aboriginal communities have been identified by a Canadian *Helicobacter* study group as a population with the highest risk of developing a *Helicobacter*-related disease such as stomach ulcers. (An autopsy of the Kwäday Dän Ts'ınchi individual revealed no sign of this problem.)

Swanston's analysis of the ancient *H. pylori* DNA revealed that some of the DNA sequences from its *vacA* gene are similar to previously published novel sequences associated with Alaskan strains. These are in turn closely related to *vacA* sequences in Asian strains. This suggests the bacteria travelled with the ancestors of the Kwäday Dän Ts'ınchi individual as they migrated from Asia to the New World thousands of years ago.

However, Swanston found that some of the ancient *H. pylori vacA* sequences were similar to sequences in European strains, suggesting European contact.

While DNA from ancient *H. pylori* has been amplified once before, this is the first time that an ancient *H. pylori* strain was characterized based on *vacA* sequence data. Swanston's work adds to the current research on ancient human migrations, and when different groups came into contact with one another.

More information: The complete research article, entitled "The Characterization of *Helicobacter pylori* DNA Associated with Ancient Human Remains Recovered from a Canadian Glacier," will be published online February 16 at the Public Library of Science (PLoS ONE) at dx.plos.org/10.1371/journal.pone.0016864

Provided by University of Saskatchewan

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