

Researchers discover gene that helps control the production of stomach acid

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University of Cincinnati (UC) researchers have discovered a gene that helps control the secretion of acid in the stomach—information that could one day aid scientists in creating more efficient treatment options for conditions such as acid reflux or peptic ulcers.

This data is published in the Nov. 3 edition of the *Proceedings of the National Academy of Sciences (PNAS)*.

UC professor Manoocher Soleimani, MD, and colleagues found that when transporter Slc26a9—the gene responsible for the production of chloride in the stomach—is eliminated from the mouse model's system, acid secretion in the stomach stops.

Gastric acid, comprised mainly of hydrochloric acid (HCL), is the main secretion in the stomach and helps the body to break down and digest food.

"Investigators were already aware of the gene that caused hydrogen to secrete in the stomach, but the gene that caused chloride to secrete has remained an unknown," Soleimani says. "When we knocked out—or eliminated—this specific transporter in mouse models, acid secretion in the stomach completely halted."

"The hydrogen and chloride genes must work together in order for the stomach to produce acid and function normally."

Soleimani, director of UC's nephrology division and principal investigator of the study, hopes that this data can help researchers create more therapies for people who overproduce stomach acid.

"A very large number of people have acid reflux—caused by regurgitation of stomach acid into the esophagus—or peptic ulcers—caused by the passing of excess stomach acid into the small intestine," Soleimani says. "This occurs because of overproduction of acid in the stomach, and current medications that help control this condition cause undesirable side effects."

He adds that long-term use of these kinds of drugs could cause damage to the lining of the stomach, among other problems.

"With this information, we hope to one day be able to administer gene therapies to patients and avoid this painful and damaging problem altogether," he says.

Source: University of Cincinnati

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