

New hope for early detection of stomach cancer

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(Medical Xpress)—University of Adelaide research has provided new hope for the early detection of stomach cancer with the identification of four new biomarkers in the blood of human cancer patients.

Stomach or gastric cancer is the fourth most common cancer in the world and the second leading cause of death due to cancer.

"Stomach cancer is typically without symptoms in the early stages so most cancers are not diagnosed until the later stages, and the survival rates are therefore low," says Associate Professor Peter Hoffmann, project leader and Director of the University's Adelaide Proteomics Centre.

"Endoscopic investigations are invasive and expensive and most are generally not conducted until the cancer is at an advanced stage.

"A non-invasive, inexpensive screening technique through a simple blood test for the [early detection](#) of stomach cancer would make a huge difference in the survival outcomes for people with this disease."

Published in the journal *Biochimica et Biophysica Acta*, the researchers have identified four new proteins that change in concentration in the blood of stomach cancer patients.

In this latest research, conducted by Dr Julia Humphries who is now at SA Pathology and Dr Megan Penno, they showed differences in the four

protein levels between serum samples from 37 [gastric cancer](#) patients, including 11 early stage [cancer patients](#), and the controls which included healthy and non-cancerous patients with other gastric disease.

All four proteins - afamin, clusterin, haptoglobin and vitamin D binding protein (VDBP) - were individually superior to a current clinical marker CA72-4 in discriminating stomach cancer from healthy controls.

"Using the four markers together produces high levels of selectivity and sensitivity in detecting [stomach cancer](#)," says Associate Professor Hoffmann.

More information: Julia M. Humphries, Megan A.S. Penno, Florian Weiland, Manuela Klingler-Hoffmann, Agnieszka Zuber, Alex Boussioutas, Matthias Ernst, Peter Hoffmann, "Identification and validation of novel candidate protein biomarkers for the detection of human gastric cancer," *Biochimica et Biophysica Acta (BBA) - Proteins and Proteomics*, Available online 7 February 2014, ISSN 1570-9639, [dx.doi.org/10.1016/j.bbapap.2014.01.018](https://doi.org/10.1016/j.bbapap.2014.01.018).

Provided by University of Adelaide

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