

New test could give SLE patients a more tolerable life

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Five million people worldwide suffer from the chronic rheumatic disease SLE, systemic lupus erythematosus. Together with rheumatologists, researchers at Lund University in Sweden are on the way to developing a new test that could resolve a number of question marks surrounding the disease and in the long run improve the lives of SLE patients. Their research is published in the next issue of the respected journal Molecular and Cellular Proteomics.

"At present, it can take up to a year before a patient is diagnosed with SLE. This is because the symptoms are diffuse and are often mistaken for other diseases. However, with this blood-based test, it is possible to determine quickly whether someone has the disease or not", says Christer Wingren, associate professor in Immunotechnology at CREATE Health, Lund University.

The test can also determine how far the disease has progressed. There are three different variants of SLE, and all require different treatment. With current methods, it is often difficult to find out which variant a patient has, which makes it difficult for doctors to prescribe the right medication. A third advantage of the new technique is that it also makes it possible to predict when the disease will become active.

"Characteristic of SLE is that the disease goes in waves, or flares. Without warning, the disease can flare up and put the patient out of action for a long time. With our test, we hope to be able to predict when an episode is about to happen and in this way prevent it using the right

medication", explains Christer Wingren.

If all goes well, hospitals could start using the technique in two to three years.

The test itself comprises a small chip, smaller than a little fingernail, on which the researchers create a [grid pattern](#), known as an array, using specially selected [antibodies](#). The antibodies serve as 'capture molecules'; by placing a drop of blood on the chip, the antibodies bind the proteins, or biomarkers, in the body. In this way, a unique 'fingerprint' is produced for each patient, which reflects the disease.

"In our article, we show which pattern of [biomarkers](#) (the 'fingerprint') to look for. From a technical point of view, we get a large number of data signals that say whether the marker is present and in what quantity. These measurements are then entered into a computer, which can present them to the doctors in a way that is easy to understand. It is this fingerprint which doctors could use in the future in clinical practice", explains Christer Wingren, who has spent most of the past decade developing the technique, and the past two years adapting it for SLE in particular.

According to Christer Wingren, a number of researchers around the world have attempted to develop something similar, but without success. The Lund researchers' success in the task is partly due to them having found a way to make the antibodies stable and thus more functional. The method has also become highly sensitive.

In order for the research to benefit patients, a number of key biomarker signatures, which form the basis for the test, have been patented. The findings have also been transferred to a newly started company, Immunovia, which was founded by Christer Wingren and three of his colleagues at the Department of Immunotechnology.

The research has its origins in the cancer research that Christer Wingren and a number of other researchers at the translational cancer centre CREATE Health work on. Together with Carl Borrebaeck, Dr Wingren uses an equivalent technological platform that can detect and diagnose different types of cancer. They have very promising data for predicting breast cancer recurrence and diagnosing pancreatic cancer.

More information: [www.mcponline.org/content/10/5 ... 005033.full.pdf+html](http://www.mcponline.org/content/10/5/005033.full.pdf+html)

Provided by Lund University

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