

# Fluorescent nano-barcodes could revolutionize diagnostics

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A new technology with research and clinical application including the early detection of disease has been invented and developed by University of Queensland researchers.

Dr Krassen Dimitrov, from UQ's Australian Institute for Bioengineering & Nanotechnology, has developed fluorescent “barcodes” called nanostrings, offers greater sensitivity and accuracy than current detection methods.

The research has been published the prestigious international journal *Nature Biotechnology*.

Dr Dimitrov said nanostrings bind to RNA molecules for digital gene expression analysis.

“Because this system can count the exact number of biomolecules present we can get an extremely accurate and sensitive picture of gene expression at a particular point in time,” Dr Dimitrov said.

“This quantitative data is superior to other gene expression systems such as microarrays, which rely on the analogue measurement of fluorescence and therefore are less accurate and have a limited range.

“The nanostring is an important technological development in both clinical and research settings. We will be able to more accurately detect molecules associated with particular diseases and in the research arena,

we will be able to identify new molecules associated with diseases and trace these back to the genes responsible."

He said the technology is based on a non-enzymatic process which reduces the chance of bias and is more robust in a variety of different conditions.

Dr Dimitrov is currently working on the next step, which will be new nano-barcodes that will further reduce the cost and improve sensitivity and usability.

Source: Research Australia

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