

Media Release

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Revolution in the fight against cancer & viruses

A recent scientific discovery could herald the introduction of fast, effective treatments for cancer and viruses.

In a paper published in the May edition of *Nature Biotechnology*, scientists describe how they have manipulated a process that occurs naturally throughout the human body, into a potential therapeutic tool.

“The process, called RNA interference, blocks the production of proteins that create cancer and viruses,” said research leader and Director of the Monash Institute of Medical Research (MIMR), Professor Bryan Williams.

“We’ve exploited this process by creating short interfering RNA, or siRNA, that are being developed into drugs to fight viruses and cancer,” he said. “We’ve now taken this a step further and worked out how we can create siRNA with different cellular properties to target different diseases.”

While previous studies had demonstrated siRNA had the potential to be a potent anti-cancer and anti-viral agent, Professor Williams had shown there was a danger siRNA-based drugs could cause a dangerous inflammatory response.

Professor Williams and his team have now discovered the physical structure of siRNA are key to creating effective anti-cancer and anti-viral drugs. This will allow both the development of siRNA-based drugs to react differently for different diseases.

“By ‘tweaking’ the structure of siRNA to target specific diseases, we can dictate whether we want a particular siRNA-based drug to block or promote an immune response, to increase the effectiveness of the treatment,” he said.

“While our research is at an early stage, human trials using siRNA are currently underway in the USA and Europe. We’re confident we have a significant impact on the way siRNA is being developed as a weapon in the fight against viruses and cancer,” said Professor Williams.

Research collaborators were the Monash Institute of Medical Research, the Department of Cancer Biology, Lerner Research Institute, Cleveland Clinic Foundation, Cleveland, USA, Department of Molecular Biology, University of Aarhus, Denmark, Laboratory of Molecular Genetics, Institute for Virus Research, Kyoto University, Japan and Integrated DNA Technologies, Inc, Coralville, USA.

A copy of the article abstract can be found at: <http://www.nature.com/nbt/journal/v24/n5/abs/nbt1205.html>

More information / interview & photo opportunities

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