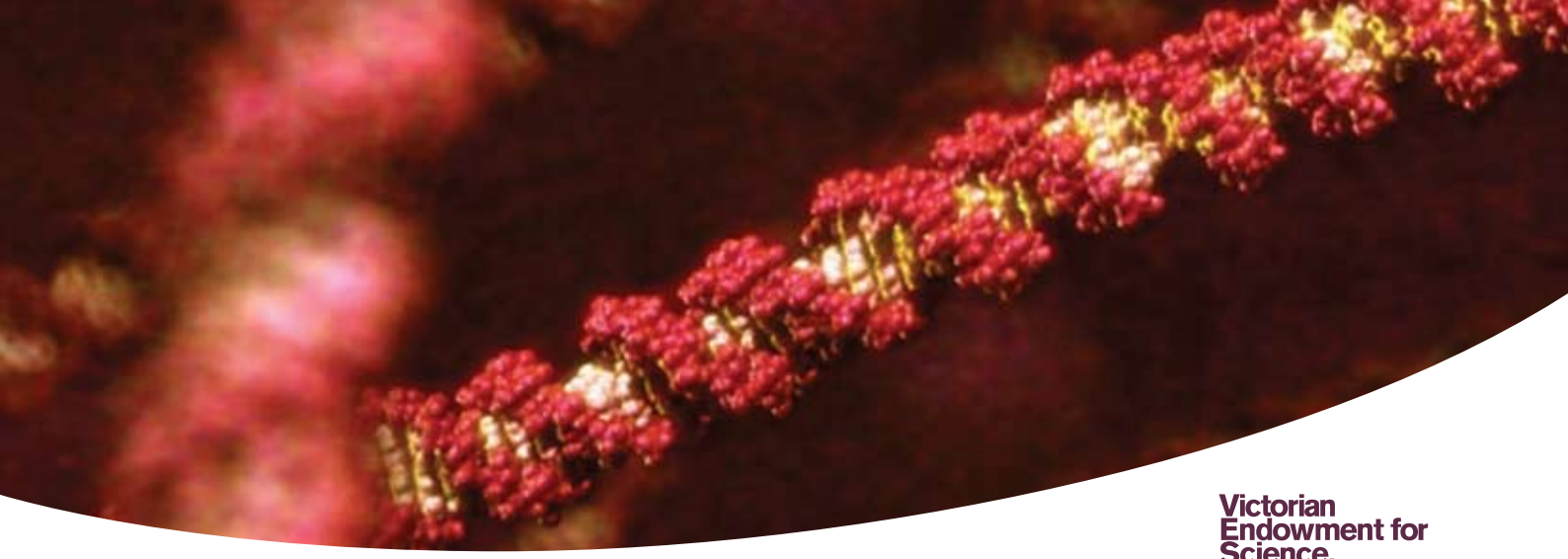

Victorian Endowment for Science, Knowledge + Innovation
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VESKI Innovation Fellow

Dr Ross Dickins PhD

Research Project

Modelling Cancer Therapy using RNA interference

Project Summary

Many drugs act by inhibiting the activity of particular proteins. By experimentally harnessing the recently described natural process known as RNA interference (RNAi), we have developed technology that allows us to quickly inhibit production of specific proteins while leaving others unaltered. This system can acutely 'switch off' protein production in cells and genetically engineered animal models of human disease, thus mimicking drug action. The research aims to establish this technology in Victoria, improve its "user-friendliness", and disseminate the resulting components and knowledge to academic and commercial collaborators in a range of biomedical fields.

More specifically the research hopes to use this technology to accelerate cancer drug discovery. Traditional cancer treatments such as chemotherapy kill tumor cells and normal cells, causing significant side effects. An emerging class of therapeutic agents (known as targeted therapies) inhibit proteins required for the survival of tumor cells but not normal cells. Using inducible RNAi to inhibit specific genes/proteins in established mouse tumours, we can model likely effects of different targeted therapies in a high-throughput manner. Because this genetic approach reveals the likely consequences of protein inhibition while initially avoiding the need for expensive and time-consuming drug development, we anticipate it will speed the development of effective, targeted cancer therapies.

Personal History

Dr Dickins was born in 1974 and raised in Melbourne. His tertiary education was at Melbourne University and he completed his PhD at Peter MacCallum Cancer Centre.

In 2003 he took up a position as Postdoctoral Fellow at Cold Spring Harbor Laboratory in New York. Since returning to Australia mid-2008 Dr Dickins has also received a Nossal Fellowship and will take up his VESKI Innovation Fellowship at the Walter and Eliza Hall Institute of Medial Research.

His groundbreaking work on RNA interference (RNAi) has been published in several top scientific journals including Nature Genetics in 2005 and 2007.

Other VESKI Innovation Fellowship recipients:
Professor Andrew Holmes AM FRS FAA FTSE
Professor Marcus Pandy PhD
Dr Gareth Forde PhD
Dr Alyssa Barry PhD
Professor Michael Cowley PhD
Professor Sarah Hosking PhD
Associate Professor Ygal Haupt PhD

VESKI Fellows in an ambassadorial role include:
Professor Adrienne Clarke AC
Professor Peter Doherty AC
Professor Alan Trounson
Mr Brian Jamieson

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BACKGROUND INFORMATION

VESKI [Victorian Endowment for Science, Knowledge and Innovation] assists outstanding Australian scientists and leading innovators to undertake their research in Victoria and contribute to building an inspired community where innovation, ideas, and business provide benefits for Australia. VESKI is supported by the State Government of Victoria.

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