



THE VICTOR CHANG
CARDIAC RESEARCH INSTITUTE

MEDIA RELEASE

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The tiny key to gene control

Tiny microRNA have recently shed light on how gene expression is controlled, a finding that could hold the key to understanding how normal development and disease-control takes place on a cellular level.

Until recently scientists thought that the story of gene expression, that is how we become who we are, went something like this. Humans are born with roughly 30 thousand genes in each and every one of our trillion cells. The genes are a blue-print of how we are to be built; they give all their information to large RNA molecules, termed messenger RNA, which oversee the building of proteins that in turn act to build specialised cells, tissues and organs.

Recently tiny RNA molecules, termed microRNA, have been discovered to determine if and when the larger RNA go to work. So microRNA are the ultimate controllers of gene expression, which is important in the development of an egg to an adult, and in the normal control of tissue-repair and, thus, the avoidance of disease.

Dr Stephen Cohen from the European Molecular Biology Laboratory in Germany has been asking how microRNAs target the larger RNAs, that is how microRNAs find and instruct larger RNAs. Dr Cohen is presenting his findings at the 15th International Society of Developmental Biologists Congress in Sydney in September, which is organised by scientists from the Victor Chang Cardiac Research Institute.

By studying the common fruit fly, Dr Cohen has developed a way of determining which microRNA targets a particular RNA. This is quite exciting as it may shed light on how genes are switched on and off in normal development and may in the future be used to combat all sorts of genetic diseases, including some forms of cancer and heart disease.

For more information and to arrange access to Dr Cohen's talk and interview time with him at the 15th International Developmental Biologists Congress, please call Samantha Lucia - Communications and Marketing Manager- VCCRI on 02 8382 8415 or 0415 140 595.