

UWS Innovation

Small RNA

Little is known regarding the impact of transcriptional interference on gene expression. Researchers at the University of Western Sydney in collaboration with the University of New South Wales have developed a novel method to both detect and regulate transcriptional interference between genes of interest using small RNA.

Using this so far over looked mechanism for identifying and monitoring transcriptional interference and for regulating gene transcription, we are able to monitor and regulate a wide variety of genes, cell types, organisms, and conditions, and offer a raft of opportunities to be exploited. The two main applications being explored by the researchers are the identification of:

- » Sets of interacting transcription units
- » siRNA to increase gene transcription

Sets of interacting transcription units

Recent research at the University of Western Sydney demonstrates transcriptional interference between coding genes. These sets of interacting transcription units (SITRUS) have many unexpected functions with regards to gene expression and disease. Scientists at UWS have developed a simple siRNA method to determine if your gene (of interest) is involved in transcriptional interference. This new technology is essential for assigning gene function and phenotype and for evaluating the application and safety of siRNA, gene knock-out, gene knock-down and other genetic technologies including the application of genetic medicines.



This same siRNA technology can also be used to increase gene transcription.

siRNA to increase gene transcription

siRNAs are typically used to knock-down gene expression. Scientists at UWS have now devised a simple siRNA method to increase gene transcription. This new siRNA technology has many important applications including repair of disease gene expression and for over-expression of genes of interest. This technology can supersede the need for gene expression constructs and complex and delivery systems or site-specific integration strategies.

UWS Innovation are looking for an Industry partner to assist in taking this research to the next level and entering into the diverse commercialisation opportunities provided by such a project.

Status

Provisional Patent filed

School

School of Medicine

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