

NON CODING RNAs

Next Generation Therapeutics and Diagnostics

Researchers at The University of Queensland (UQ) have discovered two new classes of regulatory non-coding RNAs (ncRNAs). Functional characterisation of these ncRNAs is yielding new insight into gene regulation and disease such as cancer. There is an opportunity to commercially exploit these discoveries through the development of new therapeutics and molecular diagnostics.

Technologies and Proof of Concept

- Transcription Initiation RNAs (tiRNAs) are 18-19 nucleotides in length and map specifically to transcription start sites on the genome
- Splice-site RNAs (spliRNAs) are 17-18 nucleotides in length and map specifically to the 5' splice sites of gene exons

Proof of concept studies demonstrates that specific tiRNAs modulate the expression of the human p21 tumor suppressor gene. Inhibitors of those tiRNAs represent potential anticancer therapeutics. Similar results are anticipated for tiRNAs and spliRNAs at gene loci associated with other diseases.

Applications

- Molecular diagnostics and prognostics
- Nucleic acid-based therapeutics
- New druggable targets through antisense or small molecules
- Stem cell and regenerative medicines

The integration of tiRNA and spliRNA expression profiling together with therapeutics that either specifically mimic or target tiRNAs and spliRNAs opens a novel strategy to personalised medicines.

For further information contact IMBcom Pty Ltd:

Dr Amanda Smith

Email: a.smith@imbcom.com.au

Phone: +61 7 3346 2188

