RNA Polymerases IV and V: evolution and function

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Abstract

This is gonna be the last thing I'll write.

1 Introduction

Most of the known non-coding RNAs (ncRNAs) correspond to intergenic sequences or transcripts with unknown functions. In mammals, two of the increasingly known long ncRNAs are *Xist* and *Tsix* which are involved in the regulation of adjacent genes. In plants, small-interfering RNAs (siRNAs) guide the process of chromatin modifications. These ncRNAs are generated from dsRNAs precursors and processed by dicer (DCL) enzymes into 21-24 nucleotides long siRNAs before associating with Argonaute proteins (AGO).

2 The paradox of epigenetic control

Need for transcription in order to transcriptionally silence the same region. [10]

2.1 The RNA-mediated DNA-methylation pathway (RdDM)

3 RNA Polymerase IV

how it produces siRNAs and what do they bind to : AGO specific and dicer specific. from: [1] and from [2] picture from: [3]

3.1 The subunits

- NRPD

3.2 The products and their function

- what genes are silenced and how
- DNA methylation

[4]

4 RNA Polymerase V

* open up dna or make transcripts for binding for ago ? see: [5]
see: [6]

4.1 The subunits

[7] [8]

- NRPE

[9]

4.2 The function

two proposed models as in [4]

5 Future outlook

References

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