RNA Interference and Small RNAs

RNAi is an ancient mechanism.

Current work is being done on therapeutic uses of RNAi.

There are two pathways of RNA interference: small interfering RNA micro RNA

Small RNAs called snoRNAs (small nucleolar RNAs) are "guide RNAs" for nucleotide modifications

There are three nuclease activites associated with RNA interference

- Drosha cuts the pre-micro RNAs into the 70 nucleotide hairpin micro RNA
- Dicer cuts the double stranded RNA and also the 70nt hairpin micro RNA into the 21 nucleotide small RNAs
- Slicer the nuclease activity within the RISC complex, cuts the mRNA (cleavage) according to the 21nt small RNA taken inside the RISC

Corrected siRNA/miRNA Pathways



Nucleotide Modifications by snoRNAs

- Modification of ribosomal RNAs by 2 types of snoRNAs

- snoRNAs are "guideRNAs", guide for modifications



Box C/D snoRNAs

- guide for methylation



- snoRNAs are guide RNAs for nucleotide modification
- different snoRNAs do different types of modification
- above are two examples for you to look at and enjoy