

Poster presentation

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Micro RNAs play a central role during cancer and viral infections and can serve as targets for therapy

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Background

MicroRNAs (MIRs) are central regulators of gene expression through posttranscriptional control. We at Rosetta Genomics have developed powerful bioinformatics and biologic tools, including novel microarrays and highly sensitive RT-PCR, to identify and characterize the biologic significance of human as well as viral MIRs during cancer and viral infections.

Results

The results of these studies have revealed several cancer specific MIR signatures, altered MIR expression during development, host and viral encoded MIRs during viral infections, including HIV, and central role of MIRs in control of latency in several viral species. Experiments are underway to determine the effects of modulation of expression of these MIRs at various stages and types of viral infection.

Conclusion

1. MIRs constitute a novel and highly attractive family of biomarkers for human cancer of various kinds.
2. Defining MIR targets is likely to lay the ground for novel anticancer therapy.
3. At least some of the host and of the viral encoded MIRs may have a direct effect on viral replication and latency.

4. Control of MIR expression or its modulation offers a new mode of therapy for several viral species including HIV infection.

5. The wide scope of MIR biology and implications make this fast evolving field of extreme importance to all biomedical research and the review of our more recent studies will help illustrate it.