

Homologous miRNAs involved in colorectal cancer affecting the immune system

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Abstract

Background and purpose: The expression of more than one third of human genes is appeared to be modulated by MicroRNAs (miRNAs). They control the expression of genes involved in development, growth, proliferation and apoptosis which are vital for cells and tissues. Knowing miRNA systems and their role in the biology of cancers, we could hopefully develop a better treatment in this regard. The role of some miRNAs on development of B and T cells, play an important role on the cell immunity, has been demonstrated in recent works.

Experimental approach: Phylogenetic analysis was performed for miRNAs, which plays an important role in colorectal cancer and other cancers, in order to find their relationship. Products of similar sequences of miRNAs were evaluated using the BLAST program to know whether any relation exists between miRNAs and the production of the proteins involved in the immune system.

Key results: A relationship between miRNAs responsible in colorectal cancer and the immune system was shown. Sequential similarity and their products showed that nearly similar products were expressed which helped the immune system to work efficiently against cancer.

Conclusions and Implications: It has been concluded that the similarity of miRNAs in nucleotides and proteins were involved in the immune systems and was regulated by genes seen in conserved regions of miRNAs, this could help us in finding ways to recognize indefinite miRNAs and understand the effect of compounds on a range of miRNAs.