



Overview of the role and action mechanism of microRNA-128 in viral infections

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ABSTRACT

Recently *in vivo* and *in vitro* studies have provided evidence establishing the significance of microRNAs (miRNAs) in both physiological and pathological conditions. In this regard, the role of miRNA-128 (miR-128) in health and diseases has been found, and its critical regulatory role in the context of some viral diseases has been recently identified. For instance, it has been found that miR-128 can serve as an antiviral mediator and significantly limit the replication and dissemination of human immunodeficiency virus type 1 (HIV-1). Besides, it has been noted that poliovirus receptor-related 4 (PVR4) is post-transcriptionally regulated by miR-128, representing possible miRNA targets that can modulate measles virus infection. Of note, the downregulation of seminal exosomes eca-miR-128 is associated with the long-term persistence of Equine arteritis virus (EAV) in the reproductive tract, and this particular miRNA is a putative regulator of chemokine ligand 16 (CX-C motif) as determined by target prediction analysis. In this review, the latest information on the role and action mechanism of miR-128 in viral infections will be summarized and discussed in detail.

1. Introduction

MicroRNAs (miRNAs) are small RNA nucleotides (nt) that play a crucial role in the regulation of gene expression by binding to the 3' untranslated region (3-UTR) of target messenger RNAs (mRNAs) [1,2].

miRNA-mRNA interaction results in mRNA degradation or translation inhibition, thereby reducing gene expression and modulating biological function [3]. There is evidence that host-encoded miRNAs regulate certain processes during viral infection [4]. There is considerable potential for interactions between miRNAs and viruses, as the miRNA

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