

Epitranscriptomic regulation of viral replication

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© 2017 RNA plays central roles in biology and novel functions and regulation mechanisms are constantly emerging. To accomplish some of their functions within the cell, RNA molecules undergo hundreds of chemical modifications from which N6-methyladenosine (m6A), inosine (I), pseudouridine (?) and 5-methylcytosine (5mC) have been described in eukaryotic mRNA. Interestingly, the m6A modification was shown to be reversible, adding novel layers of regulation of gene expression through what is now recognized as epitranscriptomics. The development of molecular mapping strategies coupled to next generation sequencing allowed the identification of thousand of modified transcripts in different tissues and under different physiological conditions such as viral infections. As intracellular parasites, viruses are confronted to cellular RNA modifying enzymes and, as a consequence, viral RNA can be chemically modified at some stages of the replication cycle. This review focuses on the chemical modifi