

RNA amendments control gene expression during development

Israr Khan

Department of Genetics, Hazara University Mansehra, Pakistan.

Abstract

RNA chemical modifications in coding and non-coding RNAs have been known for decades. They are generally installed by specific enzymes and, in some cases, can be read and erased by other specific proteins. The impact of RNA chemical modifications on gene expression regulation and the reversible nature of some of these modifications led to the birth of the word epitranscriptomics, in analogy with the changes that occur on DNA and histones. Among more than 100 different modifications identified so far, most of the epitranscriptomics studies focused on the N⁶-methyladenosine (m⁶A), which is the more abundant internal modification in protein coding RNAs. m⁶A can control several pathways of gene expression, including splicing, export, stability, and translation. In this review, we describe the interplay between m⁶A and non-coding RNAs, in particular microRNAs and lncRNAs, with examples of its role in gene expression regulation. Finally, we discuss its relevance in cell development and disease.

Citation : Israr Khan, Department of Genetics, Hazara University Mansehra, Pakistan.
London, UK, April 21st, 2021.