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# Nuclear export of RNA: Different sizes, shapes and functions

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**Export of protein-coding and non-coding RNA molecules from the nucleus to the cytoplasm is critical for gene expression. This necessitates the continuous transport of RNA species of different size, shape and function through nuclear pore complexes via export receptors and adaptor proteins. Here, we provide an overview of the major RNA export pathways in humans, highlighting the similarities and differences between each. Its importance is underscored by the growing appreciation that deregulation of RNA export pathways is associated with human diseases like cancer.**

## 1. Introduction

The central dogma of molecular biology states that the flow of biological information is from DNA to RNA to protein. However, this flow of information encounters a physical barrier, the nuclear envelope, which encapsulates the genome and physically separates transcription within the nucleus from translation in the cytoplasm. This necessitates the continuous transport of RNA through the inner channel of nuclear pore complexes (NPCs). Cellular functions depend on accurate expression of both protein-coding and non-coding RNAs, which have important functions both in the nucleus and the cytoplasm. Non-coding