

Abstract

Ribosomes are subcellular components that play a key role in protein synthesis. The precise and error-free process of protein synthesis is a critical determinant of gene expression and is indispensable for normal mammalian oogenesis and subsequent embryonic development. Many regulatory mechanisms are known to control this process and adapt it to particular physiological needs of the cell. Through using new methods, it has been discovered that ribosomes represent heterogeneous population and also contain many heterogeneous ribosomal proteins. That is what allows them to translate specific maternal mRNAs. Translation of maternal mRNAs is significant for oocyte and embryo maturation and development.

The aim of this bachelor thesis is to summarize and describe existing knowledge concerning specialized ribosomes and ribosomal proteins and determine their role in mammalian oocytes and embryos.

Key words

Ribosomes, oocyte development, embryogenesis, localized translation, ribosome heterogeneity, specialized ribosomes